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THE JOURNAL OF

OPHTHALMOLOGY

OTOLOGY AND LARYNGOLOGY.

VOLUME II., 1890.

GEO. S. NORTON, M.D., EDITOR.

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THE JOURNAL OF OPHTHALMOLOGY, OTOLOGY AND LARYNGOLOGY.

EDITOR,
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The first year of THE JOURNAL OF OPHTHALMOLOGY, OTOLOGY AND LARYNGOLOGY has closed, and with this number it enters upon the second year of its existence. It seems, therefore, an appropriate time for us to answer the queries of some of our friends, and for a moment look backward over the past and forward to the future. One year ago we commenced work in this almost new field of journalism, encouraged by the earnest wishes of our friends for success, even though often accompanied by the pessimistic prophecy that success could not be attained, and that failure must be the inevitable result. This, however, did not deter us from undertaking the labor, for the publisher assured us that failure would not be from want of financial support, as he was prepared to continue the journal even at a personal loss; and we upon our part had confidence that the specialists throughout the country would give us their support and not allow us to lack for good material to fill our pages. What has been the result? A success almost phenomenal. It is, we believe, rare for a new journal, particularly upon a special subject, to pay its own way the first year from its subscription list, independent of its advertisements. This has been done by THE JOURNAL OF OPHTHALMOLOGY, OTOLOGY AND LARYNGOLOGY, thus showing a large list of subscribers who are interested in these special subjects. A review of the material that has filled its pages shows that during this period sixty-four original articles upon the eye, ear, and throat have appeared, besides translations, reviews, etc. These papers, as a whole, we believe, will compare favorably with those found in similar journals for

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practical value. Occasionally an article somewhat elementary to specialists has been used, as it has been impossible in the first year of our existence to prevent the admission of all articles of this character. In this connection, the editors desire to express their most hearty thanks to the specialists throughout the country, who have almost without exception given us their earnest support.

Encouraged, therefore, by the success of the past, we now turn to the future with more confidence, believing that we can materially increase the clinical value of our pages the coming year. We shall strive, as we have from the beginning, to make this journal the foremost medium for the interchange of the best thought in the special departments here considered. But to accomplish these results, it becomes necessary for our friends, who devote their time and study to the eye, ear, and throat, to feel the importance of doing their share of the work, by contributing at least one or two short, pithy, practical papers during the year; such as the narration of some rare, interesting case, or the presentation of some discovered fact which will aid in clearing up disputed points in diagnosis, pathology, or etiology, or the recommendation of some new method of treating diseases of these special organs, whether it be by medical or surgical means. Furthermore, it must be remembered by our friends that it is to their own advantage to send any technical article upon ophthalmology, otology, or laryngology to this journal, for it will receive wider circulation in these pages among those interested in these subjects than if published in any general medical journal. Here it will be read not only by all the specialists in the homœopathic school, but also by the most prominent, advanced, and liberal men of the other schools.

One change will be noticed in the editorial staff. Dr. Malcolm Leal, who for the past year has done the work of collecting and editing all articles upon the throat, will now assume full charge of this department.

ACUTE SECONDARY GLAUCOMA FOLLOWING CATARACT EXTRACTION.

BY F. H. BOYNTON, M.D., NEW YORK CITY.

Mrs. X., æt. fifty-eight, an exceedingly nervous lady who had been an invalid for several years, was on April 19, 1889, operated for extraction of a mature senile cataract of the right eye, by the Liebold method. The extraction was made under antisepsis, and was attended by no complication.

The previous history of the case and the presence of certain physical infirmities caused some apprehension as to the best method of after-treatment to be adopted. I learned that she was very much troubled by insomnia, and was obliged, through loss of sleep and consequent nervous excitement, to walk the floor for hours nearly every night; and that, on account of a bladder disorder she was obliged to urinate from six to twenty times during the night, which act could be accomplished only in a sitting posture with the body inclined forward. Thus there seemed to be one of two methods to be followed. Either to insist upon absolute quiet in the supine position, relieving the bladder by use of the catheter, or to use less restraint, and to permit her to get into such necessary positions as relief to nature demanded. The latter method was adopted as offering fewer objections. The eyelids were closed and held together by strips of isinglass plaster, and the patient was put to bed and requested to keep as quiet as possible.

During the afternoon following the operation there were few complaints of discomfort in the operated eye; only slight smarting was experienced. But during the evening the sound eye developed a violent neuralgia accompanied by slightly augmented tension. This increase of tension was approximately estimated, as no comparative tests could be made. On my visit early the

following morning, I found the patient crying with pain in the operated eye. The lids were œdematous and of purplish discoloration. Meanwhile the pain in the left eye had disappeared. The strips of plaster were removed and the lids opened. The edges of the wound were perfectly clear, but the anterior chamber had not become re-established. There was only slight injection of the bulbus. The removal of the strips of plaster and the application of an iced compress, together with the internal administration of Rhus tox., gave prompt relief, and by evening the swelling of the lid had subsided.

The following seven days were spent in comparative comfort, except whenever restraint was attempted by application of the plaster to facilitate the healing of the corneal wound, then dull pain would recur with the re-establishment of the anterior chamber. On the eighth day, careful examination of the wound betrayed a pin-hole opening at the apex of the corneal flap, through which the aqueous flowed off as rapidly as formed whenever the cornea was left unsupported. One brushing of the corneal wound with a weak solution of the nitrate of mercury, followed by a compress bandage for thirty-six hours, caused the fistula to heal and thus permanently re-established the anterior chamber.

On the tenth day (April 29), the sudden shock from the unexpected firing of salutes, near the patient's residence, during the naval parade, caused her such fright as to produce extreme nausea and faintness accompanied by a sensation as if the eye had made a revolution in its socket. These symptoms gradually subsided and she became comfortable again.

During the evening she began to have pain in the operated eye, which increased until she screamed from its severity. Answering a summons early in the following morning I found her suffering intense pain in and around the eye, extending to the bones of the face and involving quite one-half of the head. The pain seemed almost unbearable, and she cried that she could endure it no longer. Inspection of the eye showed much turgescence of the conjunctival and subconjunctival vessels, and palpation betrayed an almost stony hardness of the eye-ball. The prompt instillation of a one-half per cent. solution eserine sulph. gave almost immediate relief to the pain and within a few hours reduced the tension to normal. Occasional use of the drops together with the internal administration of Bryonia and Gelsemium checked a

pernicious tendency to recurrence which was noticeable for three weeks afterward.

Eight weeks after the operation, I had the pleasure of giving her vision of $\frac{20}{20}$ with a glass of 10 D., which she has since worn with much comfort.

This case presents several unusual and interesting features.

I. Intolerance of restraint—even the application of strips of gold-beater's skin plaster to the closed lids.

II. Influence of the neuralgic and hysterical tendency in producing the glaucomatous pain in the sound eye immediately after the operation.

III. Transmission of the glaucomatous tendency to the operated eye and formation of the corneal fistula through escape of aqueous humor under the impulse of hypersecretion. Increased tension was, however, prevented by the above-mentioned drainage through the fistula, though an abnormal habit was no doubt developed through the protracted escape of the humor.

IV. The coincidence of sudden shock with closure of the corneal opening, and the onset of acute glaucoma from these combined causes.

V. The prompt relief afforded by remedies, and the ultimate recovery of perfect vision.

VI. The possibility of giving cases almost unlimited freedom of movement, after cataract operations, without materially jeopardizing recovery.

AUTO-MASSAGE OF THE TYMPANUM.

BY HENRY C. HOUGHTON, M.D., NEW YORK CITY.

The difficulties experienced in maintaining normal patency of the Eustachian tube and in overcoming rigidity of the auditory mechanism in chronic catarrhal inflammation of the tympanum, is such that any device or method that offers a modicum of aid is acceptable. The writer has found help in auto-massage.

The benefits accruing from general massage are now so well recognized that it is not necessary to enter upon any advocacy of its merits in this communication: personal experience of general massage led the writer to try the services of the late Dr. Munroe, of Boston, in a case of otitis interna, resulting from cerebro-spinal meningitis; the child was intractable, ungovernable, but became docile and happy under the manipulations of his mother, who was trained to the methods of Dr. Munroe. From that time local massage has been advised in chronic disease especially, to be practiced by the patient, or by some teachable servant or companion. Massage of the auricle as a whole by a rotary movement, and of the tissues covering the temporal bone, or "pressure of the tragus," as advised by Dr. Cooper of London, upon the suggestion of German authority, certainly modify the nutrition and arrest atrophic change.

The use of the Eustachian catheter, Politzer's air bag, and Valsalva's experiment all tend to check atrophic changes and delay the rigidity of the mechanism of the tympanum. Siegel's otoscope came to be used for the same purpose; the late Howard Pinkney, M.D., advised its use in connec-

tion with a syringe, about the same time that I suggested its use with the breast pump. Alternate exhaustion and condensation of the contained air tends to break adhesions and overcome rigidity. Lucae's stempel is a device in the same line. My colleague, H. P. Bellows, M.D., of Boston, kindly placed one in my hands, on his return from a visit to European clinics. I made repeated trials with it, with varying success. Although it does modify the tinnitus, few patients will tolerate repeated applications, and it requires an expert to operate it.

Valsalva's experiment is so simple and so readily performed that it has been advised by general practitioners; indeed by many aurists. In some instances, patients have accidentally discovered its value, and practiced it to an injurious extent. Any one who has had much experience with the various devices for inflating the tympanum must have noticed ill effects from all: in most instances these are temporary, in a few cases I have observed permanent injury; hence the necessity of guarding patients in their practice of Valsalva's experiment; this has been done by directing them to close the affected ear with the finger when blowing the nose. Some authority, that I cannot recall, advised suction of the tympanum by the Eustachian tube in cases of accumulations of mucus; this can be accomplished by forced inhalation, the mouth and nose being closed. Some two years ago, while studying this effect, it occurred to me to combine the two, which is readily done in the following manner: Close the external meatus with the palmar surface of the middle finger of the hand upon the same side of the body. Swing the palms of the hands forward and upward; close the anterior nares with the palmar surfaces of the thumbs, then exhale with force; the air should pass to the middle ear: maintaining the same position inhale forcibly; the air is drawn out from the tympanum. The fingers must not be removed from the meatus till after the thumbs are taken from the nose. By alternate exhalation and inhalation, the drum-head is moved forward and backward,

the ossicula are moved beyond their ordinary excursions, and mobility increased.

After a very general application of this method over a period of nearly two years in a great variety of cases of chronic catarrh of the middle ear, including those of recent origin as well as those of long standing I am satisfied that it is a valuable modification of Valsalva's experiment, an important addition to external massage of the ear.

An agent for good may be perverted, hence massage may do evil; excessive manipulation externally may make the ear sore. A patient was instructed to practice the "pressure of the tragus," *i.e.*: press the tragus into the meatus one hundred times in rapid succession morning, noon, and night; so on the principle that if little was good, much was better, she pressed till the ear became so sore that she could not lie on that side of her head. Auto-massage of the tympanum should be practiced morning and evening. At first one inflation and exhaustion will suffice, later twice or thrice will be of service; but caution must be exercised, especially in cases of long-standing disease; in such patients the drumheads may be much thickened, the articulations very rigid, the tympanic circulation far below normal, hence pressive motion must be carefully applied, as would be done in any other anchylosed joints. In one rheumatic subject deep-seated pain in the ear was set up, with increase of the tinnitus aurium; this passed away on modification of the massage; in many cases the tinnitus is increased at first, or modified in tone or pitch: this can be readily understood: the abnormal relations of disease have existed so long that the labyrinthine pressure was accommodated to those relations, hence an increase of mobility must temporarily cause some changes in subjective sounds till the inter-labyrinthine pressure is adjusted to the new conditions.

CASE OF INTERMITTENT STRABISMUS.

BY CLARA C. PLIMPTON, M.D., NASHVILLE, TENN.

Little Mary, when just three months old, suddenly, with no premonitory symptoms of any character, developed a pronounced case of internal strabismus of the right eye. This condition lasted unchanged for four weeks, and then disappeared as suddenly as it had developed. In two weeks after its disappearance, at the age of four and a half months, the first lower incisor appeared; and within a month's time the next lower incisor and four upper incisors all came through.

Again, at fourteen months of age, without any warning, the same condition of the eye appeared, lasting this time five weeks; and, as before, followed, after its sudden disappearance, by the irruption of nine teeth.

A third time, when two years and nine months old, the strabismus came again, more gradually this time, also disappearing gradually, lasting seven weeks; and followed by the appearance of the molars.

There was no unusual appearance of the eye when the canine teeth came.

At the age of three years and about nine months the eye began again to cross at intervals, continuing crossed for a day or two, then almost normal for two or three days. This state of things continued about four months, being permanently crossed only two or three weeks of the time. There were no more teeth to account for the trouble. But there was a bad condition of the stomach, almost acute indigestion, and she frequently complained of "ear-ache." With the correction of the trouble of stomach and ear, all eye symptoms disappeared. And up to this time, her age being now five and a half years, there has been at no time any abnormal condition of the eye.

I will add a few words which may have some bearing upon the case.

The first year of little Mary's life was one of anxiety on her account, for she seemed very frail and did not thrive well.

I have always thought her condition was the result of want of a fair start. When only a few days old, her father was taken very seriously ill with typho-malarial fever, and for seven weeks it was a time of anxiety and suspense to all, especially so to the mother in her helpless condition; and how could a mother's milk escape unharmed with such a weight of care and grief hanging over her?

At the birth of the third child, little Mary's sister, we discovered that its eye was crossed, and remained so for two weeks; no return since, although she is now two years old. And this time the mother was almost exhausted from the strain of a whole summer's watching and care of a very sick child.

CONSIDERATIONS REGARDING THERAPEUTICS OF DISEASES OF NOSE AND THROAT.

BY CHARLES L. CLEVELAND, A.M., M.D., CLEVELAND., O.

About a year ago I collated for my own use, from nearly all our standard works, the various drugs that had been used homœopathically in diseases of the nose and throat. I found one hundred and forty-three altogether. The absence of precision in observations, not only of provers but also of clinical results reported (as illustrated by the identity of special action and incongruous vagueness of expression), reduces this list very materially; so that, doubtless, forty to fifty remedies would include all that are of any real advantage when given internally.

The question that has confronted me constantly in my work—and still confronts me—is, what advantage, if any, and if so, how much, does the homœopathic specialist in laryngology and rhinology have over specialists of other schools of medicine in the same line of work? Particularly is this a pertinent question now that so large a part of the work is purely surgical, and so brilliant results are accomplished by a judicious and skillful application of comparatively simple local therapeutic measures that do not act upon the homœopathic principle. And in view of the constantly improving methods of treatment, the question as to whether the man that thoroughly understands the general as well as the special action of the remedies used homœopathically, can better ameliorate the course of disease than those ignorant of homœopathic remedies, or even cure some cases which the latter class of specialists cannot cure, becomes a broad and difficult question to solve.

But there are a few medicines which seem to me to possess a decided preference over all other known methods; and which, in the present condition of medical science, warrant the claim of superior therapeutic resources which are distinctively homœopathic.

In the hope of eliciting, to some extent, the views of other laryngologists, I will mention some of these remedies, together with the indications, viewing only such portion of the general action as particularly relates to the special action upon diseases of the nares, naso-pharynx, pharynx, and larynx. And in mentioning these indications, it will be my effort to confine myself almost exclusively to the results of my own experience, drawing out such features of each remedy as I have found to be especially important; thus the inferences are suggestive rather than exhaustive, for the subject involved cannot be much more than hinted in a paper of this kind.

First, I would speak of *Calcarea carbonica.* The wide reach of this remedy in its relation to scrofulosis, tuberculosis, and rachitis, and the various affections of the nose and throat having their origin and determining symptoms in these dyscrasiæ, places it in a position of importance which the rather meagre special action would at first sight scarcely warrant, Beyond the sore and ulcerated nostrils and the offensive odor from the nose like bad eggs or gunpowder (and these symptoms without causative relation and almost wholly inconsequential), the nasal and naso-pharyngeal action, as far as our materia medicas are concerned, is of no value; and the only throat symptoms of importance are the painless hoarseness occurring in the morning and the expectoration of sweet-tasting muco-purulent matter, yellowish in color, and accompanied by a sore, torn feeling in the larynx, or as if a plug or painless obstacle were there. I am aware that there are are several other "symptoms" placed in our works upon materia medica referable to the special field under discussion, but I am unable to see their utility, except possibly as placed in a repertory; and it would only be a possible utility then, in

view of their vague redundancy when compared with many other remedies. The only special conditions which my experience with this important medicine has seemed to demonstrate, are an excessive redness of the mucous membrane of both nose and throat (not a congestion nor a chronic venous hyperæmia, but rather an evenly-diffused heightened color), and accompanied by excessive sensitiveness to local applications, especially to stimulants, absorbents, and astringents. When this condition exists, attended or not by such glandular hypertrophy or sluggish resolution of inflammatory products—the results of acute attacks—which characterize the strumous diathesis to which this drug so broadly corresponds, and if the leuco-phlegmatic temperament is present, together with the perspiration of the feet (more or less constant) and head while sleeping, and perhaps also perspiration of the palms of the hands, I would expect better results—results more far-reaching and long-lasting, from Calcarea carbonica, either in the 3x, 6x, or 12x trituration, three grains from once to four times daily, than from any combination of local measures (outside of indicated surgical work, if any) or internal medicines that could possibly be brought to bear upon the case. Some of my most gratifying cures, and great reliefs in incurable cases, have been speedily attained with this preparation; and that in old "hopeless" ones that had been sprayed and douched *ad infinitum*, and also *ad nauseam*. One reason for failure to obtain results is repeating the dose too frequently, and another is, that two weeks or longer are generally necessary to demonstrate whether Calcarea is going to do any good or not. And it is nearly always advisable to clinch whatever result is secured at the end of a month with a week of Sulphur, as we know that these two remedies follow each other well.

I would like next to say a few words about *Kali bichromicum*. I think we are apt to expect too much of this remedy at too early a date after beginning its administration, even in the cases of atrophic catarrh, for which it is frequently prescribed. When we consider the general trend

of its action upon the mucous membrane, how it starts with coryza, profuse and watery; how it proceeds from this to a loose catarrhal secretion of a decidedly yellowish color, and going on from this to the fibrous, tough, stringy condition so well known and so characteristic; how it proceeds even further than this, either to the formation of false membranes or to ulceration, and thence to a true atrophy with all its attendant symptoms, objective and subjective, we perceive how necessary it is to wait a considerable time for any homœopathic action that will amount to anything in the way of permanency; and in order to avoid the marked concomitant effects, when desirable to do so, it is generally best to begin with the 3x or 6x triturations and gradually (*i.e.*, after two weeks or a month) go up to the 12x and perhaps higher. The fact that the pathological conditions developed subsequently to the initial coryza are so deep-seated and pronounced—more so than almost any other remedy in the entire twelve to fourteen hundred of the materia medica—shows that the coryza is radically different from one which might arise from Camphor or Ipecac, or remedies of that class. My favorable experience with this remedy is limited almost entirely to cases of atrophic rhinitis and laryngitis and scrofulous conditions in the same locations. The points of special importance, as far as the general action of the drug is concerned, are its influence upon the liver, which expresses itself in frequent attacks of congestion, with a tendency toward organic disease, complexion being pale and yellowish, the urine rather scanty, with excess of urates, and the rheumatic and thermatoid condition of the fibrous structures, as shown by the dull, bruised sensation and the rapidly shifting nature of the pains. Such a line of symptoms occurring in a scrofulous, syphilitic or rheumatic person, who is also a fat, light-haired individual, would present a fairly clear picture of Kali bichromicum. I have not thus far found the special subjective symptoms, ordinarily presented in materia medicas, of particular value; because, although quite numerous, they are in their varied character simply such as might occur in such

marked pathological conditions as we find this drug inducing, and also from the fact that they are all split up and mixed together with that unique and heterogeneous confusion that is so inexplicable to some intellects and so marvelously gratifying to others!

(*To be continued.*)

THE VARIABLE PROGRESS OF SENILE CATARACT.

BY HENRY C. ANGELL, M.D., BOSTON, MASS.

In 1879 I was consulted by a man, a prominent resident of Boston, for failing sight. He was eighty years old, and I suspected and found beginning cataract. Having informed him of the nature of his affection, he told me that twenty years before he had consulted Dr. ——, mentioning the name of a leading oculist, and had then been told that he had incipient cataract, but as he had been able to use his eyes comfortably from that time until quite recently, he had thought it a mistaken diagnosis; yesterday, however, he had called on the same surgeon, and had again been assured that he had beginning cataract. After this time I examined his eyes at intervals of a few months, and found the cataracts progressing slowly, but rather steadily. The lens opacity was of the common mixed cortical and nuclear form, and there was no apparent cause for the delay in maturing. The patient died some two or three years ago before either cataract had fully ripened.

This was rather an unusual example of the slow progress of many senile opacities of the lens, and its delay in maturing had appeared quite inexplicable to me until I read the results of the late investigations of the nature and cause of senile cataract by Dr. W. Schoen in the last number of the *Archives of Ophthalmology* (vol. xviii., p. 322). I can reasonably suppose now that at the age of sixty my patient, a scholarly man, had overtaxed his eyes, and suffering from a slight asthenopia, consulted his oculist, who, dilating his pupil widely, discovered indications of beginning opacity of the lens—just what might have been discovered if a similar

examination had been made perhaps a dozen years earlier. Nuclear sclerosis had very likely begun only a short time before he had come to me.

But if the investigations of Dr. Schoen make the delayed progress of the opacities in this case intelligible, just how his researches can be made to explain the erratic course of the disease in the following case is not quite so clear.

Mrs. M., aged sixty-three, a healthy woman, consulted me for recent near-sightedness, June 1, 1888. I found beginning nuclear cataract of both eyes.

R.V. $-.75$D. $=\frac{10}{15}$
L.V. $-.75$D. $=\frac{10}{12}$

On Nov. 16, '88, V. $=\frac{10}{30}$ O.U.
On Mar. 25, '89, V. $=\frac{10}{25}$ O.U.
On July 1, '89, V. $=\frac{10}{20}$ O.U.
On Oct. 18, '89, R.V. $=\frac{10}{25}$ L.V. $=\frac{10}{40}$

She still reads with tolerable ease through her $+4.00$ D. glasses. I have never changed them nor have I given her any treatment whatever, as I do not believe in remedies to prevent or "delay the growth" of senile cataract.

These two cases, indeed, show how easily one might be deceived in attempting to regulate the progress of such opacities by treatment.

REMARKABLE TOLERANCE OF AN EYE TO A FOREIGN BODY.

BY F. PARK LEWIS, M.D., BUFFALO, N. Y.

The dangers of sympathetic inflammation of the eye are so constantly forced upon the attention of ophthalmologists that it is now no longer necessary to urge most watchful care when a foreign body has entered the globe and its removal cannot be effected. Innumerable instances are on record in which ciliary wounds have sufficed to establish an inflammatory condition which has ruined the fellow eye. But it is also true that on occasions an extraneous substance which has entered the globe may become encysted and remain in the region of the richest nerve supply, entirely innocuous. Such an instance is illustrated in the following case.

J. P., æt. thirty-three years, presented himself at the City Eye and Ear Dispensary, Feb. 18, for relief for a slight burn of right eye from hot metal. The epithelium was abraded and the injury insignificant. While talking to the patient the left eye was observed to be defective, and on examining it, the globe was found slightly reduced in size ; a scar extended through the entire diagonal meridian of the cornea, traversing its center and extending from the nasal to the temporal side. A corresponding scar with retraction marked the diameter of the iris. The pupil was contracted and filled with the remnants of an absorbed lens. Through the sclera on the upper and outer side, one millimeter back of the iris, a black spot was visible which when touched gave a metallic sound. When the electro-magnet was applied the

bulbus sprang forward and could be readily drawn from side to side.

The man, it seems, was struck by a burr from a rivet which he was hammering, in January, 1876. He was taken to the Wills Eye Hospital, Philadelphia and remained for three months under the care of the visiting surgeons. The wound was so large that it was supposed the metal ruptured without entering the bulbus. From that time, for several years, he had at irregular periods inflammatory attacks lasting from one to three weeks. Latterly the globe had at times been tender but had not been sufficiently painful to oblige him to relinquish his work. Attempts were made, after enlarging the opening at which the point appeared, to draw the foreign substance out, but it was found to be absolutely immovable. After enucleation the globe was opened, and a half-crescentic piece of metal, which was evidently a quarter of the circumference of the rivet head, was found back of the iris and imbedded in the ciliary processes on either side. The length of the iron was almost exactly equal to the diameter of the iris and in weight equaled 2.50 grains.

The chip was so firmly encysted that even after the eyeball had been opened the metal could be with difficulty released from its attachments.

The case is of interest when it is borne in mind that for thirteen years a large foreign body had been carried in the ciliary region—with frequent attacks of inflammation and with absolutely no sympathetic involvement.

AN ANALYSIS OF SEVEN HUNDRED AND FORTY-FOUR CONSECUTIVE CASES OF MUSCULAR INSUFFICIENCIES.

BY GEO. S. NORTON, M.D.

From January 1, 1888, to October 1, 1889. a period of one year and nine months, 744 cases of insufficiency of the extrinsic ocular muscles have been treated in my private office. These, with the aid of my assistant, Dr. Geo. A. Shepard, I have tabulated in various ways, a condensation of which will be found in the three following tables. Although for the past six or seven years my attention has been particularly directed to the study of the action of the ocular muscles and the treatment of their insufficiencies, yet I have thought best to only include in this report those cases examined since January 1, 1888, as previous to this date my records are not sufficiently complete nor methods of examination so exact that definite conclusions can be drawn with any degree of accuracy. In order that mistakes should be avoided so far as possible, nearly all the cases included in this report have been subjected to two tests with Steven's phorometer, first by an assistant and afterward by myself.

In this paper I do not propose to enter into any discussion of the elementary portion of the subject, as the description of the various forms of muscular weakness, the means of diagnosis, and the detailed methods of treatment by prisms, glasses, tenotomy, etc. For this has already been quite fully elucidated by many writers, and only recently in the pages of this journal (July, 1889). At this time I simply wish to analyze the following tables and endeavor to draw some definite deductions in relation to

the influence of age and the various errors of refraction in producing muscular disturbances, find out whether certain deviations of the eye are liable to give rise to any given train of symptoms, and present some practical conclusions arrived at from my experience in this line of work.

TABLE I.

	Em.		H.		M.		Ah.		Am.		H. + Ah.		M. + Am.		Ahm.		Amh.		Anisom.		Total.		Grand Total.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Exophoria	10	16	16	57	9	17	5	11	4	2	11	20	8	12	1		1	3	6	20	71	158	229
Exophoria in accom.	2	8	12	26	2	5	1	6	2	2	1	6		5	1	1			4	5	25	64	89
Exoph. and R. H'p'h.		2	1	6	2	5		1		1		2		6		1			1	3	6	25	31
Exoph. and L. H'p'h.		6	1	12	2			1	1	1	1	4	3	1					2	5	10	30	40
Exoph. and Esoph. in accom.		1	1	4																	1	5	6
Exoph. R. H'p'h. & Esoph. in accom.				1																		1	1
Exoph. L. H'p'h. & Esoph. in accom.		1	1																1		2	1	3
Esophoria	11	4	28	54	1	6	6	4	1	1	5	19	2			1		2	3	10	57	101	158
Esophoria in accom.		3	1	10	1	1		1	1			1	1	1							4	17	21
Esoph. and R. H'p'h.			4	5	1	2	2	1						2					2	3	9	13	22
Esoph. and L. H'p'h.	1	1	2	14	2	1		1	1		1	7				1			4	5	11	30	41
Esoph. and Exoph. in accom.		3	7	13	1	3		1	1	2	4	6		4			1			7	14	39	53
Esoph. R. H'p'h. & Exoph. in accom.		1	3									1	1							1	4	3	7
Esoph. L. H'p'h. & Exoph. in accom.			2	1				1				1	1	1						1	3	5	8
R. Hyperphoria	1	1		1		1		1			1	1		1					1		3	6	9
L. Hyperphoria		4	2	6		2		1	1		3			1				1	1	4	7	19	26
																					227	517	744

TABLE II.

	Under 10.		10—20		20—30		30—40		40—50		50—60		Over 60.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Exophoria	2	2	18	43	21	35	20	28	6	28	4	18		3
Exophoria in accom.			4	13	5	12	8	17	5	13	2	5	1	4
Exoph. and R. H'p'h.	1		1	5	2	6	2	8		3		2		1
Exoph. and L. H'p'h.			4	5	3	3	2	7	1	9	2	4		1
Exoph. and Esoph. in accom.						1	1			4				
Exoph. R. H'p'h. & Esoph. in accom.						1								
Exoph. L. H'p'h. & Esoph. in accom.					1		1							1
Esophoria	2	2	12	34	9	29	12	13	15	21	2	4	1	2
Esophoria in accom.			1	1	1	2	2	2		9		3		
Esoph. and R. H'p'h.			2	4	1	4	1	1	4	3	1	1		
Esoph. and L. H'p'h.			1	9	1	3	1	8	1	8	4	2		1
Esoph. and Exoph. in accom.		1	6	14	2	11		7	4	4	2	2		
Esoph. R. H'p'h. & Exoph. in accom.			1	1	2			1	1	1				
Esoph. L. H'p'h. & Exoph. in accom.			1	1	1		1	3		1				
R. Hyperphoria				1				3	1		2	1		1
L. Hyperphoria				2	2	8	2	1	1	5	1	3	1	

TABLE III.

	Asthenopic Symptoms..		General Headache.		Frontal Headache.		Occipital Headache.	
	M.	F.	M.	F.	M.	F.	M.	F.
Exophoria	35	51	14	23	20	58	2	26
Exophoria in accom.	15	28	3	12	6	19	1	5
Exophoria and R. H'p'h.	3	7	2	10	1	5		3
Exophoria and L. H'p'h.	4	12	3	7	3	9		2
Exophoria and Esophoria in accom.	1	1				3		1
Exoph. R. H'p'h. and Esoph. in accom.		1						
Exoph. L. H'p'h. and Esoph. in accom.	1				1	1		
Esophoria	27	27	11	21	15	41	4	12
Esophoria in accom.	3	6		7	1	3		1
Esophoria and R. H'p'h.	8	3		3	1	5		2
Esophoria and L. H'p'h.	5	12	1	7	5	9		2
Esophoria and Exophoria in accom.	10	11	1	12	2	12	1	4
Esoph. R. H'p'h. and Exoph. in accom.	2		2	2				1
Esoph. L. H'p'h. and Exoph. in accom.	2		1	3		1		1
R. Hyperphoria	3	2		1		3		
L. Hyperphoria	3	8	1	7	2	4	1	

In explanation of the tables I would state that under the term anisometropia are only included those cases in which the error of refraction has been of a different type in the two eyes, not a difference in degree of the same anomaly; also that under the classification of hyperphoria only variations of 1° or more have been included, and in the majority of cases no extended effort has been made to bring out the latent hyperphoria as has been done by some writers. In Table III., under Asthenopic Symptoms will be found those cases in which only eye symptoms have been complained of. In the forms of headache noted, eye symptoms may have been present or absent. When the patient has complained of headache in various portions of the head, or all over as it is often expressed, it has been classified under General Headache; when it has predominated in the frontal region and in temples, it has been placed under Frontal Headache, and lastly when the pain has been most severe in the occiput or back of neck, it has been arranged under Occipital Headache. Furthermore, I have adopted the classification of muscular insufficiencies recommended by Dr. Geo. T. Stevens, which I have found the most satisfactory yet proposed.

Exophoria.

Insufficiency of the internal recti, or tendency of the eyes to diverge, is naturally the most common form of muscular

disturbance. Especially is this true among the educated classes, for the constant over-use of the internal recti at the near point is, of course, liable to produce a weakness of these muscles with its attendant train of asthenopic symptoms. Thus we find 318 cases of uncomplicated exoph., 229 of which were present both at distance and in accommodation, while 89 were only in accom. But in the whole number of cases observed (744), there was exoph. more or less pronounced at either the distant or near point, or both, in 460. Of these 460 patients, 136 were male, and 331 female. This disproportion in the two sexes is more marked in exoph. than in esoph. or hyperph., but not excessively so.

Turning now to the frequency of exoph. in the various errors of refraction, we observe that although the largest number of cases have been found in hyperopia, owing, no doubt, to the fact that this anomaly of refraction is so much more common than any other, still exoph. is, as we would expect, relatively more frequent in myopia, or myopic astigmatism, as can be seen by comparison of these columns with esoph. Thus exoph. in M. Am. and M.+Am.=52. Esoph. in M. Am. and M.+Am.=11. Exoph. in H. Ah. and H.+Ah.=120. Esoph. in H. Ah. and H.+Ah.=116. Emmetropia does not seem to tend to produce any particular form of muscular deviation, except the usual excess of weakness of the internal recti from over-use. The same may be said of mixed astigmatism. On examining the cases of anisometropia, it will be noticed that although a lateral deviation has been the most common, yet there is a relatively higher proportion in which a vertical deviation has been added to the lateral, especially in connection with esoph.

Age has very little influence, *per se*, upon muscular insufficiencies. Exoph., as well as all the other deviations, has, however, been more frequently observed between the years of ten and forty, when the eyes are more constantly and severely employed. After forty years of age there were only 10 cases of exoph. in men, while in women there were 49. This may have been only a coincidence, or it may have

been due to the influence of the menopause, which would aid in bringing out any existing weakness.

When exoph. was found in Em., M. Am., M+Am. and anisometropia, asthenopic symptoms alone were as commonly complained of. But when exoph. was in connection with H. Ah. or H+Ah., headache was more often experienced either alone or in connection with the eye symptoms. Thus in 106 cases of exoph. in Em., M. Am., M+Am., and Anisom. 52 suffered from asthenopic symptoms alone. This proportion was increased in Em. and Anisom., in which only 25 out of 55 cases complained of headache. While, upon the other hand, of 73 cases of exoph. in H. there was frontal headache in 31, and occipital in 15, all of the latter occurring in women. In 47 cases of exoph. found in simple and compound hyperopic astigmatism there were 24 cases of frontal headache and 5 of general or occipital headache. A further examination of Table III. will show that headache alone or in connection with asthenopic symptoms has been much more commonly experienced in women than in men; especially is this noticeable in occipital headache, of which there were 60 cases in women and only 9 in men. Men, upon the contrary, have more generally complained of eye symptoms without headache.

Exoph. at the distance with esoph. in accom. has been an unusual combination, dependent upon an irritable weakness of the internal recti, associated with a spasm of the ciliary muscle, which produces a spasm of the internal recti when the eye is in accommodation. This condition has been found, as a rule, in hyperopia and in women; of the 6 cases, 5 were in hyperopia and 1 in emmetropia with presbyopia; 5 of the 6 were also in women. Correcting lenses were all that was necessary to effect a cure. Exoph. in connection with hyperph. has been more generally observed in women, in the proportion of 55 to 16. The relative predominance of exoph. with R. hyperph. in M. and M+Am. is to be noted.

In no ophthalmic disorder has it been found so necessary to individualize the case as in muscular insufficiency.

Sometimes the highest degrees of exoph. may be present without asthenopic symptoms, headache or nervous disturbances, while upon the other hand the lowest degrees may give rise to an aggravated train of symptoms. For example, in a lady patient aged forty-five, with compound hyperopic astigmatism, there was an exoph. of 18° at fifteen feet and an exoph. of 28° in accom., and still she was using the eyes without inconvenience and with no head symptoms. Upon the contrary, a man, aged thirty-seven, refraction Em. (though "scope" showed a low degree of H.) with a latent exoph. in accom. of 2°, only detected by holding the prisms before the eye for some time in accommodation, had complained of frontal headache and eye strain for eight years, upon any effort in reading. Systematic exercise of the internal recti relieved him after failure of other means. These, it is true, are extreme cases, but they only illustrate and emphasize the fact that the degree of exoph. is no certain indication of the severity of the symptoms from which the patient may complain; it depends upon the individuality of the patient.

This is further illustrated in the relative power of the internal recti for overcoming prisms. By a very little exercise, the internal recti will usually overcome prisms of from 50 to 60 degrees, but I have found patients able to overcome prisms of 70 to 80 degrees, and who yet showed exophoria by the phorometer, while upon the contrary I have seen orthophoria established when the highest power of adduction had only reached 20°.

The first important point in the treatment has been to neutralize any existing error in refraction, and the strength of the glass given has been greatly influenced by the relative power of the muscles. For instance, in hyperopia with exoph. a weaker convex glass has been found more beneficial than if there was esoph.; while in myopia with exoph. the stronger lens has given most relief. The reverse holds true in esoph., as will be mentioned later on.

Systematic exercise of the internal recti with prisms, in order to tone up the weakened muscles, has been found to be the most satisfactory mode of treatment for exophoria.

By following this exercise, one is often surprised at the almost marvelous progress that will be made in aggravated cases. Several of these have been noted upon my records in which the exoph. has really been a divergent strabismus with crossed diplopia produced by simply placing a red glass before one eye in order to better define the pseudo-image. In these cases the exercise has been commenced with the red glass alone before one eye, then increased to the lower prisms and so upward, until in a short time, even three or four weeks, prisms of 50 to 60 degrees have been overcome, and the exoph. has disappeared together with its attendant train of symptoms. In fact there are very few cases of exoph. that cannot be cured by systematic exercise providing the patient will persist in the treatment. My methods of exercising the muscles are very similar to those already described by Drs. Chas. Deady and A. B. Norton in the July number of this journal, and therefore do not need repeating here. The duration of treatment has been found to vary from a few days to several months, usually from three to four weeks. The principal exceptions, in which exercise has failed and in which tenotomy of the external recti has been found necessary, have been as follows: First, when the patient has for some time only used one eye and it has been impossible to obtain satisfactory diplopia, or, if obtained, to work up the adducting power of the eye more than two to five degrees, even by patient trial. Second, those cases in which the exoph. has been of high degree, and when it remains even after the adducting power of the eye has been carried to between seventy and eighty degrees and continued at this point for three or four months. In these cases carefully performed tenotomies of one or both external recti have been very satisfactory.

Another measure which has occasionally been found to be of value in the treatment of exoph. has been the forcible stretching of the external recti. After the instillation of cocaine, a firm hold of the insertion of the internal rectus is taken with fixation forceps, and the eye forcibly carried inward three or four times. The irritation over the inser-

tion of the internal rectus seems to act beneficially as well as the stretching of the external rectus.

A palliative method of treatment has occasionally been employed by decentering lenses inward or by the addition of prisms with bases inward ; but this has only been recommended as a *dernier ressort*, or when for some reason the curative measures could not be followed.

Always after exercising the muscles a mild current of galvanism has been employed for one to three minutes, placing the positive pole over the exercised muscle and the negative to the forehead. How much benefit can be ascribed to the galvanism I am unable to say ; it certainly, as a rule, relieves the tired, strained feeling often experienced after the exercise, and I am inclined to believe that in some cases it may be of some permanent aid. A solution of brandy and water, salt and water, or of the tincture of Ruta or Senega have been usually advised locally, while such internal remedies as Argen. nitr., Calc. phos., Con., Gelsem., Jabor., Nat. mur., Onos., or Seneg., have been at the same time prescribed.

Esophoria.

Until quite recently the only form of muscular insufficiency which received attention in the text-books upon ophthalmology was weakness of the internal recti. But it is now found that in many cases the asthenopic symptoms are dependent upon esophoria or convergence of the optic axes. Reference to Table I. will show that in the whole number of cases reported (744) there were 179 of uncomplicated esoph., and 320 of esoph. alone or in connection with other muscular insufficiencies; of these, 215 were found in women and 105 in men. Thus in comparison with exoph. we find convergence of the optic axes relatively more frequent than divergence, in men.

The influence of refractive errors in producing esoph. is very marked, as we find that 151 of the whole number of cases observed (320) or nearly one-half, occurred in hyperopia. This, however, was expected, as the increased ac-

commodation required for hyperopia naturally increases the tendency to convergence. This has led me to formulate a general rule for prescribing glasses in hyperopia, which has been of decided practical value. *In manifest hyperopia with esoph. give stronger glasses than in the same degree of manifest hyperopia with exoph.*, for one can depend upon there being a higher degree of latent hyperopia in the former than in the latter. This I have frequently verified under atropine. In very low degrees of hyperopia, as 0.50 D., if this rule is followed and glasses prescribed only when there is esoph., and not when there is exoph., most satisfactory results will generally be obtained.

An examination of Table II. shows that esoph. has been more often observed between the ages of 10 and 30, and that it has been less frequently found from 30 to 40 than from 40 to 50; especially has this been marked in women. Another peculiar fact is, that of the 21 cases of esoph. in accom. 9 were observed in women between 40 and 50 years of age, and 3 in women between 50 and 60. This would suggest the thought that reflex irritation from the sexual organs, especially at the menopause, has an influence in increasing any tendency to spasm of the ocular muscles and so bringing out convergence of the optic axes.

Esophoria in men has more frequently given rise to asthenopic symptoms (27 to 27), while headache of various kinds has been more commonly complained of in esoph. occurring in women (74 to 30). Esoph. at the far point with exoph. in accom., has been of not unfrequent occurrence; there having been 53 cases uncomplicated with hyperphoria of 1° or more. Women have been more subject to this combination than men in the proportion of 39 to 14. Esoph. has been relatively more often found in connection with hyperph. than has exoph. with hyperph.

Esoph. is almost invariably more pronounced and of a higher degree when the eyes are under atropine than when not under its influence. This may seem contrary to what might be expected, but it indicates that atropine does not impair convergence, and that the increased effort at accom-

modation when the ciliary muscle is paralyzed is expended upon the convergence of the optic axis, and, therefore, augments the amount of esoph. A study of my cases also shows, as in exoph., that the degree of esoph. does not determine the extent of the trouble experienced, as an esoph. of from 10 to 20 degrees has been present without giving rise to any eye or head symptoms, while upon the other hand the lowest degree has been the cause of a serious train of symptoms. The relative power of abduction may also vary within wide limits. Although the average strength of the external rectus is about 12° or 14°, yet a power of abduction of 6° or 8° may not be incompatible with perfect strength, or a power of 20° with perceptible weakness.

The most important point in the treatment of esophoria has been the more or less complete neutralization of the error of refraction associated with the convergence and which, as a rule, is the cause of it. Take the large majority of cases particularly in hyperopia, put on the correcting lenses, and it will be found that the esoph. has disappeared, so that the test with phorometer will show orthophoria or even exophoria. In fact correcting glasses will almost invariably diminish the degree of esoph., even if it does not cause it to disappear entirely.

Systematic exercise of the external recti with prisms has not given as satisfactory results as of the internal recti in exoph., probably owing to the fact that esoph. is more often a muscular spasm, while exoph. is a muscular weakness. But perseverance with exercise in the lower degrees of esoph. will in many cases accomplish the desired result. In exoph. an exercise of the internal recti for five or ten minutes at one sitting may be all that is required. But in esoph. it is necessary for prisms to be worn bases inward for from one to two hours daily, using stronger and stronger prisms until the required strength has been reached. I, therefore, usually prescribe two pairs of prisms for the patient to exercise with daily at home, increasing the strength as rapidly as they can be overcome. At the same time the case is carefully watched at more or less frequent intervals

and the effect noted in order that the exercise may not be carried too far. Forcible stretching of the muscle has not often been done, not sufficient to enable us to give definite results.

Tenotomy of the internal rectus, partial or total, has been much more frequently made than of the external rectus, and with very favorable results. In fact, I believe it to be the only curative method of treatment for an esoph. of more than four to six degrees remaining after correction of the error in refraction; and even in the lower degrees, when long continued exercise has failed in producing the desired effect, we must resort to a graded tenotomy. Often though a partial tenotomy does not markedly reduce the degree of esoph., yet it will sufficiently weaken the internal rectus so that exercise of the external rectus can again be carried on and the equilibrium between convergence and divergence thus be established. The general rule which I follow in esoph., or in any other form of muscular insufficiency, which is sufficient to produce symptoms that require treatment, is to tone up the weaker muscle if possible; if this cannot be done, then weaken the antagonistic stronger.

Hyperphoria.

A difference in the level of the two eyes has not been as frequently observed as has been claimed by Dr. Stevens to be present. But these tables, it may be said by enthusiastic advocates of the importance of hyperphoria, do not strictly represent the relative frequency of this form of heterophoria. For it must be remembered that hyperph. of less than 1° has not been admitted to these tables, even though always recorded in my case-books, and in many cases in the hurry of practice care has not been taken to discover latent degrees of hyperph. If latent hyperph. and hyperph. of less than 1° had been added it would have very materially increased the number of cases found in connection with the lateral deviations, for it is very common to find a slight variation in the height of the images at fifteen feet with the phorometer, but a prism of 1° will over-correct in the opposite

direction, showing a deviation vertically of less than $\frac{1}{2}°$. These minute degrees of heterophoria have seemed to me to, only exceptionally, produce eye or head symptoms, and therefore have been excluded from classification in these tables.

Upon examination of the tabulated cases the first point that arrests attention is the greater frequency of L. hyperph.; of the uncomplicated cases of which there were 26, and of R. hyperph. only 9, while in the whole number of cases (188) there were 118 of L. hyperph. to 70 of R. hyperph. This predominance of L. hyperph. was more pronounced in uncomplicated cases, and when in combination with esoph. Certain errors of refraction do not seem to have had any marked influence in the production of hyperph., though possibly anisometropia may have shown an increased tendency in this direction. Sex may have had some weight in causing hyperph., as it has been more common in women in the proportion of 133 to 55. Hyperph. has been more general in adults, being rarely seen uncomplicated in children. When hyperph. has been associated with esoph. it has been found earlier in life than when connected with exoph., thus agreeing with the relative frequency of the two lateral deviations. Patients have more generally complained of asthenopic symptoms in vertical deviations of the eyes than from headache, but when headache has been experienced it has more often been general or in the frontal region.

It is readily acknowledged that a lower degree of deviation of the eyes in the vertical meridian is more liable to produce serious eye and head symptoms than the same amount of lateral deviation. But there is no more definite rule for this form of heterophoria than for the other varieties, for I have seen a hyperph. of less than 1° give rise to considerable disturbance, while upon the other hand a hyperph. of 6° and more has been present without serious inconvenience being experienced: The same wide range in the relative strength of the superior and inferior recti has been noticed. For example, in one case of R. hyperph. of 2°, prisms of 9° and 11°, with base upward before the right

eye, could be overcome with very little difficulty, while the normal strength of the superior and inferior recti rarely exceeds 5°. Thus it proves that in this form of heterophoria, as well as in all the other varieties, it is essential to correct diagnosis, prognosis, and treatment, to individualize the cases. One must consider not only the degree of heterophoria, but the amount and character of the disturbance to which it gives rise.

In the treatment of hyperphoria I first neutralize any error of refraction that may be present, though the correction of this does not as often do away with the hyperph. as it does in esoph.

Systematic exercise of the superior and inferior recti muscles with prisms in frames, base upward in one eye and downward in the other, according to the form of hyperph. has been of decided service, and is to be recommended for the lower degrees of vertical deviation, but seems to be of little or no value in hyperph. of more than 2° or 3°. This exercise, to be of any avail, must be persisted in daily as advised under esoph.

When a patient is compelled to wear glasses constantly on account of an anomaly of refraction, I usually correct the hyperphoria, if of low degree, by decentering the lenses upward or downward, or by combination with prisms. Though this may necessitate a complicated lens when added to sphero-cylinders or bi-cylinders, yet it will give relief from the annoying symptoms and is preferred by the patient to any operative interference.

Partial or total tenotomy of the superior and inferior recti muscles must be made in the higher degrees of hyperph., and it is occasionally advisable in the lower degrees, particularly when the patient does not desire to wear glasses constantly or when they are not required for a refractive anomaly. Care must, however, be taken not to overcorrect and allow the muscle to reattach too far backward; especially must this caution be followed in operating upon the inferior recti, for though there may be no deviation in looking straight ahead, yet if the movement of the eye downward

has been impaired, diplopia will be experienced when looking down, as in walking, and so cause a most serious annoyance.

Benefit seems to have been derived in some cases from galvanism and internal medication. The remedies suggested under exophoria have been employed in hyperphoria according to symptomatic indications, especially Senega.

In the large number of affections of the ocular muscles which have come under my observation in the past few years, many anomalous cases have been met, some of them suggesting problems not easy of solution. It was my intention to consider these at this time, but the length already reached by this paper will necessitate the postponement of this portion of the subject to a future paper.

CASE OF A HAIR IN THE ANTERIOR CHAMBER.

BY CHAS. H. HELFRICH, M.D., O. ET A. CHIR., N. Y. CITY.

E. O., æt. thirty, presented herself on August 28 for treatment at Dr. Rounds's clinic with the following peculiar injury, which she received only half an hour previous to her admission. Her employment was that of an expert jewelry finisher, and she was engaged in removing an imperfection from a lace-pin when the accident occurred. It was necessary for her to keep the pin pressed closely against a small flying wheel, and while she was so occupied the pin was wrenched from her grasp, the sharp point entering the cornea at about the middle of its inner border and penetrating the iris and the lens.

The most peculiar feature, however, was that in its flight it grazed the inferior margin of the upper lid, detaching one of the ciliæ and carrying it into the anterior chamber, where it lay resting upon the surface of the iris, just above the pupil, with one end close to the opening made by the pin. It seems almost incredible that a hair should be carried through so small an opening as that made by the pin without being firmly attached to the pin, but such was the case. Furthermore, the pin was smeared with a red mixture called rouge, used in polishing jewelry, and some of this was found adherent to the wound in the cornea and in the iris.

She was immediately admitted to the hospital and an operation performed for the removal of the hair. An incision was made at the inner border of the cornea with a keratome, which was withdrawn rather quickly in the hope that with the sudden escape of the aqueous humor the hair would be driven out before it. This maneuver was unsuccessful, however, and the hair was only removed after very careful and long-continued endeavors to secure

it in the grasp of various delicate forceps. This was exceedingly difficult, as the object to be grasped was so very fine, and it was important not to wound the iris during the manipulations. It would have been less difficult, and, as subsequent events proved, better to have made an iridectomy. In this way not only the hair would have been removed, but the small spot of rouge as well. It seems, too, that there would have been less liability to iritis, for with the removal of the foreign bodies the eye would have been freed from the portion of the iris punctured by the pin. But the patient being a young lady, it was thought best not to mar the appearance of the eye if it could be avoided. Examination of the hair showed that it was an ordinary eyelash, 7 millimetres in length.

After the operation the patient was put to bed, the ice-bag applied, and Acon. 1 administered internally. She spent a very comfortable night, and when the eye was examined the next morning no trace of inflammation was visible. The lens, however, was becoming cataractous. Atropine was instilled and the other treatment continued. The third day a violent attack of iritis set in, which was probably due to the presence of the rouge on the iris and lens, as the iris itself had certainly not been injured while removing the hair.

The iritis was complicated with a large hypopyon and lasted about three weeks. Rhus followed by Hepar internally, combined with instillations of atropine, cured her. I had the pleasure of examining her eye during the last week. The lens was cataractous, but her perception of light was very good, so that the operation of keratonyxis will undoubtedly restore the vision.

THE GALVANO-CAUTERY FOR THE TREATMENT OF HYPERTROPHY OF THE TONSILS, IN CHILDREN AND ADULTS; WITH CASES.

BY J. B. GARRISON, M.D., NEW YORK CITY.

Those two glandular organs lying, one on each side of the fauces, between the anterior and posterior pillars of the soft palate, which we recognize by the name of amygdalæ, or tonsils, are not infrequently the plague of one's life almost, and of no small annoyance to the physician who may be called upon, time after time, to treat the patient who may be so unfortunate as to confess to a predisposition to an inflammation of the organs above named.

In one case, the least exposure to inclement weather may be followed by an inflammation which takes on the suppurative form, and after several days of agony the evacuation of pus, either by puncture or spontaneously, gives relief, to be finally, after more waiting and great care, once more restored to the normal condition, with the almost certain knowledge that at no far distant date the same trouble must again be realized.

In another case, the lacunæ, which in health furnish a slightly turbid, mucoid secretion, which serves to lubricate the parts, and possibly facilitate deglutition, become inflamed, and the natural secretions become, to some extent, pent up and accumulate, pushing forward over the surface, producing a condition which causes great fright in the family, and possibly sometimes furnishes an opportunity for the doctor to add another brilliant cure of diphtheria to his credit.

But it is to that condition in which the tonsils have become chronically enlarged, and in which, at the best of times, the lumen of the fauces is greatly encroached upon, that I would here call your attention.

Very many children suffer more or less constantly with these enlargements, and, in some cases, become entirely relieved when the age of puberty has arrived.

Homœopathic medication has in my hands been of the greatest relief in many instances, and in some cases worked a complete cure, but there are some in which nothing short of an operation seems to be sufficient. The mere thought of any cutting operation is unbearable to many, and in the case of children the sight of the knife is enough to provoke the desire for the defensive, in many cases.

The use of the galvano-cautery for the reduction of the hypertrophied mass is exceedingly simple in its application, and is almost entirely without pain.

It only becomes necessary to gain the confidence of the little one, and your patient will gladly return to you for the subsequent treatments. It is hardly necessary to minutely describe the instruments necessary, as they are quite well known, but I will say that any good cautery battery will do, and that the small platinum knife should be used, and passed into the lacunæ, and then the connection made, allowing the heated point to remain from three to five seconds, when it may be withdrawn, and passed into another, making five or six punctures at each sitting. It is my rule to operate only upon one tonsil at each sitting, and I generally require them to come to me every fifth or sixth day. The number of operations necessary to produce the desired result cannot be foretold, but there is generally a marked retrocession after the first sitting, and in most cases from six to ten treatments will probably give a good result.

I will quote two of my cases, showing its applicability to both child and adult life.

Case I.—Alfred ——, aged twelve years; well developed, bright, surrounded by every luxury that money can buy; had been confined to the house for the greatest part of each winter for a

number of years past, as every exposure caused an inflammation of the already greatly enlarged tonsils, accompanied by a high temperature and a membranous deposit on the tonsils, and several days in bed would be the rest of the story.

I have been for two years past his medical adviser, and although I urged upon his father the necessity for surgical treatment, his aversion to any treatment which savored of an operation, together with the hope that every time would be the last, kept him from giving his consent.

Remedies were faithfully tried, and acted nicely during the acute attack, but seemed to have no effect in making them less frequent.

Last September, while in the country, he was attacked with a very severe sore throat, which the local physician pronounced to be diphtheria. I was telegraphed for and found him with one of his old conditions, but somewhat more aggravated than was usual, and in a few days he was entirely convalescent. His father had by this time become thoroughly frightened, and promised upon their return to the city, on Oct. 1, to have me treat him as I thought necessary.

On presentation at my office on Oct. 8, 1889, the left tonsil presented to the median line, and the right far enough to leave a space of about three-eighths of an inch between them. I made six punctures into the lacunæ, and had him present himself again upon the eleventh, when I treated the right one in a similar manner.

On the fifteenth the slough had separated from the left side, leaving it perceptibly smaller, and I again made the application, seeing him twice each week up to Nov. 20, when the tonsils had both been reduced so that they were covered by the anterior pillars. He had attended school regularly every day up to that time. On the 30th of November he took a cold by becoming overheated while playing in the Park, and on Dec. 1 I found him suffering with a severe catarrhal attack, which lasted several days, but the tonsils did not become at all inflamed or enlarged.

Case II.—Mrs. S——, æt. thirty-eight, janitress. While treating her at my office with electricity for uterine difficulties, she complained of a sore throat, and requested me to examine it. On doing so I found both tonsils irregularly enlarged and indurated. She said she had had sore throat all winter long for many years,

sometimes suppurating three or four times during the season. So liable was she to these attacks, that she was unable to attend to her houses properly during the bad weather. I said "electricity can help you here also,—suppose we try it." I did so, making the applications alternately to each tonsil upon the same days I made the uterine treatments, and in three weeks the tonsils were reduced so as to be just in sight, and although she had exposed herself in all weathers, she had experienced no trouble with her throat, and has not to the present writing, two months in all.

I might give more cases, but I merely desired to illustrate the fact that the treatment was as applicable to the adult as to those of tender years.

PRISM REFORM.

BY JOHN L. MOFFAT, M.D., O. ET A. CHIR., BROOKLYN, N. Y.

The object of this paper is to suggest to the profession the advisability of specifying the position of the point or apex of the prism, instead of the base, in the diagnosis and treatment of affections of the extrinsic ocular muscles.

The proposed change will simplify the study of this subject, and all who are not in daily practice will find it more easy to remember the following rules for the attitude of the prism :

1. In measuring heterophoria, point the prism in the same direction that the eye deviates.

2. To exercise one of the muscles, point the prism in the direction that that muscle moves the eye ; for the recti, point the prism toward the muscle to be drilled.

Thus to measure exophoria, point the prism outward, and to treat it by exercising the weakened rectus internus, point your prisms inward toward that muscle. So the prism is pointed inward in measuring esophoria and outward to strengthen the delinquent externus ; a prism pointed upward will measure hyperphoria, but must be held point down in drilling the inferior rectus of the same eye, which is the one at fault, while, after measuring hyperphoria point down, the prism must be reversed for exercising the superior rectus of that side.

Occasionally the superior oblique needs exercise by combining a prism pointing outward with a weaker one point down, and by inclining the head toward the shoulder of the affected side. To drill the inferior oblique, point the prisms

out and up, and incline the head toward the opposite shoulder.

One advantage of the present terminology is its terseness; comparatively few practitioners could be induced to add a syllable to the phrase "base down" by substituting "apex up," but "point up" is just as legitimate and would be in harmony with the directions to "point the prism." Of course to understand the *rationale* of the use of prisms one must thoroughly understand their effect upon the rays of light entering the eye, but it is quite as simple and easy to remember that the light is deflected "from the apex," as to say "toward the base," and clinical reports, papers, and lectures will be more readily comprehended and remembered if the proposed nomenclature be adopted.

The writer knows by personal experience the advantage of the new terminology.

CASE OF TENONITIS FOLLOWING AN OPERATION FOR STRABISMUS.

BY L. B. COUCH, M.D., NYACK, N.Y.

In Dec. 1888, I was consulted by —— Reccio about his son, aged eight, who had been afflicted for years with a gradually increasing convergent strabismus. I operated, Dec. 17, on the left eye by the subconjunctival method. On section of the tendon quite a little effusion of blood occurred above the upper border of the tendon, which a counter-puncture failed to diminish. A cold compress of Pond's Extract and water was applied and continued for a day or two to diminish the soreness. About thirty-six hours after the operation a profuse and gradually increasing yellow discharge occurred from the conjunctival wound, which opened and became oval in size. The conjunctiva and subconjunctival tissue, tendon, and capsule sloughed with astonishing rapidity, till finally the glistening sclerotic showed at the bottom of the wound from three-eighths to one-half inch in diameter. Very little pain was experienced at any stage of the disease. Finally, the sclerotic became thinner and thinner, and the contents of the eyeball bulged outward almost one quarter of an inch in diameter. I kept the eye as clean as possible, bandaged it, and sent the patient to my friend Dr. Geo. S. Norton, who advised Calc. iod.^{2} internally every two hours, and a continuation of the bandage. Under this treatment the staphyloma subsided, the discharge diminished, and the patient was requested to return when fully recovered for an operation to advance the muscle; the eye being everted almost as much as it had formerly been inverted.

A few words now as to causation of this important disease. Wells exhausts the causation, course, progress, termination, and treatment in about one-half a page of his excel-

lent work on Diseases of the Eye. He declares that this severe type of inflammation is generally due to cold draughts and sudden changes of the temperature. According to De Wecker it may follow the operation for strabismus if the sclerotic is too freely exposed or the capsule too freely incised.

In the above case the sclerotic was not exposed at all, and the capsule was incised less than in any of the thirty odd cases that I had operated on successfully before. Stelwag in his treatise does not mention the subject of tenonitis at all, neither does Gross in his System of Surgery, nor is it even mentioned by Ashurst in his Encyclopædia of Surgery, so that the literature at my command is very meagre.

As to the causation of tenonitis in my own case I cannot of course positively determine, but the extremely bad hygienic surroundings of the patient may have been a potent cause. The boy with eight others, adults and children, slept in two rooms eight by ten and ten by twelve feet, in which were one window and one door only. These were kept carefully closed night and day on account of the sickness of a child with severe broncho-pneumonia. A small coal stove kept red-hot maintained the stuffy, bad-smelling apartments at a temperature constantly varying between 90° and 110°.

In this offensive, reeking atmosphere, breathed over and over by the dirty occupants of the rooms, who never took a bath in their lives, this boy lived night and day; and to this fact I ascribe this attack of tenonitis. Certain it is that *cold* draughts or exposure of the sclerotic did not obtain in my case.

A CASE ILLUSTRATIVE OF THE PART PLAYED BY THE EXTRINSIC MUSCLES OF THE EYE IN THE DEVELOPMENT OF MALIGNANT MYOPIA.

BY F. G. RITCHIE, M.D., WILMINGTON, DEL.

Mrs. H——, aged twenty-eight, of Norfolk, Va., brunette, full habit, called to consult me, Sept. 23, concerning a black spot, which she had noticed for a week past, before her eyes, and which was causing her a great deal of annoyance. On general inspection there was no asymmetry of the face, and nothing about the eyes to arrest one's attention except a slight monolateral convergent strabismus of the left eye, and this not sufficient to detract from her good looks but rather to add to them. The motility of the eye was not impaired. On closer examination, however, by the oblique illumination, I found, situated in the lower and inner quadrant of the cornea, a distance of three or four millimeters from its centre, the evidence of a perforating ulcer; there being a leucoma adhering at that point, and I was also able to distinguish a minute anterior capsular cataract. Upon questioning her further, she informed me that she had had an ulcer of the cornea when she was about four months old, and that the attending physician had charged her mother never to allow any one to meddle with her eyes. She had never had any trouble with her eyes since that time, until two years ago when she went to an oculist who prescribed the glass she was then using, for reading, which was $+\frac{1}{42}$. Palpation showed T — 2 in the left eye. Upon testing her at the distant type, I found O. D. $V=\frac{18}{20}$, O. S. V=shadows. By using $+ .50\ D^s \supset + .25$ D cylindrical, axis 30°, vision in the right eye was $\frac{15}{16}$, and the lines on the astigmatism test correct. The left eye was not improved by any glass. The examination

with the ophthalmoscope showed the fundus of the right eye normal, but the left fundus presented a large posterior staphyloma, atrophic spots in the macula and scattered elsewhere about the posterior pole of the eye, fluidity of the vitreous and large filiform opacities. Three days later the vision of the right eye was $\frac{18}{20}$, and with +.25 D. cylindrical, axis 30°, V = $\frac{18}{15}$. Twelve days later, under atropine gave the following: O. D. V. $\frac{18}{100}$ + 1.50 D^s ⌒ + .25 D. cylindrical axis 40° V. = $\frac{18}{15}$. One week later, O. D. V. $\frac{18}{20}$ + .25 D^s ⌒ + .25 D. cylindrical axis 40°, V. = $\frac{18}{15}$. I accordingly ordered—

O.D. + .25 $D.^s$ ⌒ + .25 D. cylindrical, axis 40°.
O.S. Plane.

The case, to me, is interesting for two reasons: First, it is the only case I have met with in which there was hyperopia in one eye and progressive malignant myopia in the other. Secondly, it illustrates, most beautifully, the part played by the extrinsic muscles of the eye in the development of malignant myopia. Let us again glance over the history of the case, and we find that binocular vision has been wanting since birth, or practically so, as the parents state that the left eye has turned in from the time she had "an ulcer on the sight"; we have also found a leucoma adherens and an anterior capsular cataract which confirms this statement. It is evident, therefore, that that eye has never taken an active part in the visual act, and, such being the case, we can eliminate spasm of the accommodation as a factor in its production, and, for the same reason, can also discard the influence of contraction of the ciliary muscle upon the choroidal vessels, giving rise to venous hyperæmia and consequent inflammation of the uveal tract. Her position in life has been such that she has never been obliged to do anything for her own support, and had no inclination to engage in fancy work or anything that would necessitate close application or favor cephalic hyperæmia. The right eye being hyperopic to a slight degree, she had no occasion to bring her work close to the eye, or, as is more frequently the case, incline the head forward so as to bring the eyes nearer the work; on the contrary the tendency in her case

was to carry it farther from the eye. As we have noticed before, the degree of strabismus was slight, but appreciable. There, therefore, remain but two factors, that of the pressure exerted by the external rectus and the oblique muscles, and the traction of the optic nerve. The latter is inconsiderable when we take into account the degree of the deviation, but the pressure of the muscles has been maintained constantly during the past twenty-eight years, thus including the period of development of the eye since birth.

A COLLECTION OF PERSONAL EXPERIENCES IN CATARACT EXTRACTION.

BY CHARLES DEADY, M.D.

(*Concluded.*)

GEO. S. NORTON, M. D., NEW YORK.

The most favorable season of the year for operating on cataract must depend mainly upon the location. Extreme heat or cold should be avoided, if possible. In New York City I do not operate during July and August, though would not hesitate to do so in the country, if moderately cool.

Age has less influence upon success than the general condition of the patient, though one would naturally expect that the healing power would be impaired somewhat in extreme old age. For example, in two patients, over eighty years of age, operated within the past year, one resulted in sloughing of the cornea, the other made a perfect recovery. The former was an old lady, greatly debilitated, with both mental and physical powers at a very low ebb. Every precaution was taken to insure success, including preliminary iridectomy and the use of antisepsis. The operation was perfectly smooth and attended by no accident, but, notwithstanding, suppuration of the cornea followed from no apparent cause, except low tone of general health. The second case was an old gentleman in excellent health, though three years older than the first. The lens was extracted without iridectomy, and he made a rapid recovery without any inflammatory reaction, regaining good vision. Any chronic disease, especially chronic nephritis or diabetes,

that will impair the vital forces, will, I believe, tend to influence unfavorably recovery from the operation.

Mature cataract is, no doubt, the most favorable form upon which to operate, but still I do not hesitate to remove immature, hypermature, or artifically ripened lenses, being careful to make a peripheral capsulotomy, thus not leaving cortical substance free in the anterior chamber. A review of my cases shows that the success, so far as operation and recovery are concerned, has been as good as in cases of mature cataract.

Removal of cataract, after a preliminary iridectomy, is, I believe, the safest method of extraction, and more certainly insures success than any other method; it diminishes the danger of after-inflammation to the minimum. In the first eight or ten years of my practice I made an iridectomy at the time of extraction, but my results were not satisfactory, possibly due, however, to non-experience and non-use of antiseptics. Since the publication by Knapp and others of their favorable results from the so-called simple extraction, I have, within the past few months, made from twelve to fifteen extractions without iridectomy; all of which have been successful. No serious complications have arisen in any of the cases, and a clear round pupil has almost invariably resulted. By care and following definite rules, the difficulties of this method of extraction have not been augmented. There has, thus far, been no more tendency to after-inflammation than in extraction with preliminary iridectomy, but this cannot as yet be stated as a fact, owing to my limited experience in simple extraction. I, however, believe that it is destined to be the future operation for the removal of cataract.

Antiseptic measures are of the greatest value. My method of employment is as follows: The instruments are thoroughly cleansed either in a solution of bichloride of mercury, 1 to 2000, or in carbolic acid, 1 to 200, with the exception of the knife, which is immersed in a solution of boracic acid. My own hands, as well as those of my assistants, are washed with soap and water, nails carefully

cleaned, and then again washed in the solution of mercury or carbolic acid. The patient is directed to have the face thoroughly "scrubbed" once or twice before the operation with soap and water. At the time of the operation I wash the face with one of the above solutions of mercury or carbolic acid, taking great care to cleanse the margin of the lids at the root of the ciliæ, often laying a wet compress over the eyes for a few minutes. The conjunctival sac is not flooded unless there is a catarrhal secretion, when bichloride of mercury 1 to 8000 is employed. All the instruments used upon the eye are dipped into the boracic acid solution before using. After the extraction, the same solution is usually dropped into the eye, but no injections are made into the anterior chamber.

General anæsthesia is not employed unless the patient is particularly nervous and unmanageable, when ether is administered. Cocaine is only used once, instilling three or four drops of a 2 per cent. solution into the eye about five minutes before the operation. Unless the extraction is to be made without an iridectomy, when a 4 per cent. solution is instilled three or four times, in order to produce partial dilatation of the pupil as well as anæsthesia.

The operation is always made by daylight. My incision is always upward, unless opacities of the cornea or other complications render a different incision desirable. The puncture and counter-puncture are made in the sclera at the upper third of the cornea, the center of the incision lying in the cornea about one millimeter from the upper corneo-scleral margin. In simple extraction my incision lies wholly in the cornea.

If a preliminary iridectomy has been made, I do not use either the speculum or fixation forceps, relying upon my assistant to raise the upper lid, while the eyeball is steadied by the fore and middle fingers of my left hand until the puncture is made, when the eyeball can be easily held by the knife. In extraction without iridectomy I use both speculum and fixation forceps while making the incision and opening the capsule, removing both instruments before

expulsion of lens. If an iridectomy is to be made, both instruments are necessary.

Peripheral capsulotomy with a cystotome is always made in ordinary cases, unless the iris is intact, when no attempt is made at peripheral opening of the capsule. In several cases of Morgagnian cataract, or when there have been indications of a thickened capsule or atrophy of the suspensory ligament, I have extracted the lens in its capsule with most satisfactory results, in no instance having had loss of vitreous.

The manipulations required to remove the lens are, I believe, most important to an easy and perfect delivery, and it is strange how many ophthalmic surgeons fail to understand the mechanism. The pressure should be made with a scoop upon the lower border of the cornea, directing the force backward, not upward, until the upper edge of the lens, having been tilted forward, engages in the wound, then the direction of the force can be upward as well as backward, following the lens as it passes out. During these manipulations the forefinger of the left hand holding the upper lid will serve to steady the eye; open the wound and aid in the delivery. The cortical substance is usually more easily removed directly following the nucleus than after waiting for anterior chamber to fill. The method, which is not unfrequently adopted, of applying the pressure to the upper lip of the incision, and so working from the vitreous forward upon the lens, seems to me most awkward, unscientific, and occasionally dangerous to the eye.

Loss of vitreous is a very rare complication in my experience for the past few years, the only two cases being those reported in vol. i., part 3, of this journal.

No prolonged attempt is made to remove cortical substance remaining behind after delivery of the nucleus and cortical substance which immediately follows. Especially is this true when that which is left behind is small in amount and retained in the capsule, for repeated endeavors in this direction only tend to increase the danger of inflammatory reaction, while a clear pupil can always be

obtained later by discission. After removal of the lens, great care is taken before bandaging to thoroughly cleanse the wound from any cortical substance, shred of capsule, or prolapse of iris. This is done with a hard rubber spud or spoon, dropping a solution of boracic acid upon the eye at the same time. This, I believe, is an essential point in promoting rapid union of the wound.

In relation to the question of bandage or no bandage, which has so agitated ophthalmic circles for the past two or three years, I can pronounce myself as unprejudiced. In some cases a light roller bandage has been employed; in others the lids have only been united with a strip of isinglass plaster. Of late the latter method has been more frequently followed in uncomplicated cases. The advantages derived from one method seem to be compensated for in the other, so that I have not been able to determine which is to be usually preferred, but have come to the conclusion that it is necessary to individualize our cases. Some patients will experience decidedly more comfort from having the eyes covered, while to others a bandage is a source of annoyance. The patient is commonly operated upon in bed, and afterward directed to lie as quietly as possible, turning from the back to the unoperated side as he desires. He is not allowed to sit up to eat, nor, as a rule, permitted to get up to urinate. This rest in the prone position is urgently advised for forty-eight or seventy-two hours, unless the patient is very nervous and restless, when more liberty is allowed. After this time he can sit up, and is gradually permitted to do more and more each day. The room is never darkened, whether the eyes are bandaged or not; only taking the precaution not to allow the bright light to shine directly in the face of the patient. No local application is used immediately after the operation, but about the third day, or earlier if indicated, duboisine or atropine is instilled.

The only three cases of failure which have occurred in my practice during the past ten years have resulted from puru-

lent inflammation starting in the wound and extending to the whole eyeball.

To prevent, as well as to arrest, the progress of any form of inflammation, in its initial stage, occurring soon after cataract extraction, I have found no local remedy equal to the use of ice, as already explained. Only one case of suppuration of the cornea, which had so far advanced that haziness along the line of incision was apparent, have I ever seen prevented from going on to a fatal termination to the vision. This was checked and useful vision obtained, even after a slough had filled the wound, by the hourly use, day and night, of a warm solution of the decoction of calendula. In other cases it has failed, as well as the solutions of eserine, bichloride of mercury, boracic acid, etc. In any iritic complication, duboisine or atropine should of course be employed. Internal medication is, I believe, of decided value in the treatment of the various complications which arise after cataract extraction. For the neuralgic pains, which frequently occur within twenty-four hours after an operation, great relief can often be obtained from five-drop doses of the tincture of Allium cepa, as first recommended by Dr. Liebold. Morphine has only been found necessary in very exceptional cases. Rhus tox.[1] in water has been my chief reliance both in the early and late stages of any inflammation showing itself within seventy-two hours after an extraction. It is given as soon as the patient begins to complain of pain accompanied with lachrymation and a tendency to œdema of the lids. After pus has formed, Hepar, Silicea, or Calc. hypohos., either alone or in alternation with Rhus, has been found of service. Plastic iritis, making its appearance about the eighth day, earlier or later, has received the usual treatment for this condition. Not very unfrequently a low form of chronic conjunctivitis, sometimes with chronic hyperæmia or inflammation of the iris, has been observed. The best treatment for which, that I have been able to find, has been to send the patient out in the fresh open air each day. It has been

followed with more benefit than the employment of all external or internal remedies.

Discission has been made in 50 per cent. of all my extractions, and I believe it to be advisable in fully 75 per cent.; but formerly I was not as particular about obtaining the very best vision as at the present day.

W. A. PHILLIPS, M.D., CLEVELAND, OHIO.

I find that season has little or no effect on result of operation.

Age makes little difference, if the patient is in good condition otherwise; plethoric and intemperate cases are not so favorable.

I do not touch cataracts until they are ripe enough. Have had no experience with artificially ripened cataract, and have operated only two which were over-ripe, consequently can give no useful statistics.

I almost invariably make preliminary iridectomy. Do not extract without iridectomy. My success has been better since adopting preliminary iridectomy; but that may be due to more skill and care latterly.

I disinfect instruments in boiling merc. chloride solution 1 to 4000; wash the conjunctival sac in argent. nit. ½ per cent. solution, if there be any secretion from conjunctiva or lachrymal sac; otherwise use merc. chloride 1 to 4000. Never have injected anterior chamber with any solution.

For anæsthesia I use cocaine 4 per cent. solution. I have no use for "other methods."

Have always operated by daylight, and prefer Von Graefe's modified linear incision.

I use the speculum to control the lids, because it is the most convenient, and, so far as I know, answers as well as anything, especially since the use of cocaine has been at command.

I prefer fixation forceps to insure steadiness and position of ball till knife is fairly introduced.

Capsule is ruptured sometimes by Knapp's method, generally by T incision. Lens is tilted with curette.

I have never lost vitreous but twice; in one case the eye was lost. Cortical substance should be as thoroughly removed as possible and wound left absolutely clean.

For a bandage I strap a pledget of cotton over lid. Depends on patient, about putting to bed. I abandoned close bandaging and close confinement to bed and a very dark room soon after I had any cases to manage. I permit most patients to do as they please about sitting, or even walking about, at any time. I believe close confinement has ruined many an eye, particularly the warm, close bandage. I think the room for the first few days should be moderately darkened; at the same time, would not care particularly if that precaution—if it is one—were not observed.

In my experience the chief cause of failure is leaving cortical substance behind.

I believe the careful use of ice to be the best means of combating the first appearances of inflammation. I think we have all been too afraid of its use in this class of cases. Hot applications are next in order. I don't think medicines help much, if any. Atropia, of course; but if inflammation once sets in fairly, stand from under.

I should say about one case in ten required discission.

CHAS. M. THOMAS, M.D., PHILADELPHIA.

I have never noticed that the season had any influence whatever on result.

General conditions have exerted but little influence, unless it be that *extreme* feebleness and ill health have at times apparently caused slow healing of wound. Of local conditions the only important one is the presence of mucopurulent discharge from conjunctiva or lachrymal sac.

In the comparatively few unripe cataracts extracted, the results are not appreciably worse than in others, though needling is usually required on account of difficulty in removing all soft matter. The *artificial ripening* I am inclined to look upon with more and more favor, particularly as most of my extractions are now made with preparatory

iridectomy, even in ripe lenses. I recall no special experience in over-ripe lenses.

I have never extracted without iridectomy. Since my forty-first case (my extractions now number 150 odd), I have done preliminary iridectomy more and more frequently; and now an extraction without it is the exception. The generally accepted rule of doing a preliminary iridectomy when the companion eye has already been lost, or where there are local complications existing, would seem to indicate that this practice adds something to the safety of the extraction. If this be so, why not give the ordinary run of cases the benefit of this same cautious procedure? The fact that in my last 75 cases I have not lost an eye through inflammatory action is, I think, due in no small degree to the increasing frequency of my preparatory iridectomies.

I at present use mercury bichloride 1 to 10,000 for irrigation. Instruments are boiled immediately before operation, and immersed in a weak carbolic water.

Since the introduction of cocaine, I have used no other anæsthetic; never operate without it. Have always used a 4 per cent. solution in distilled water. One drop is instilled before washing the eye, and a second drop a minute or two before making the incision. In an iridectomy, a third drop is, if possible, run on to the iris before it is grasped with the forceps. I have never noticed any ill effects from its use.

For extractions I have always used daylight. For discission, unless the membrane is very white, I have lately employed an electric lamp with bulls-eye.

Lids are usually controlled with speculum, occasionally by retractor. Have had no experience with any other method.

Ball is steadied with ordinary fixation forceps, which are usually removed immediately after incision. I now open capsule entirely by peripheric incision, in order, first, to avoid entering anterior chamber with instruments other than knife; secondly, to prevent contact of soft matter with surface of iris. Lens is delivered by pressure on cornea

with a shell spoon. Cortex is coaxed out by upward rubbing with edge of lower lid.

My incision being entirely corneal, a loss of vitreous is of infrequent occurrence. Out of eight cases, there were four losses, two partial successes, and two in which result was not influenced.

I give much attention to the coaxing out of soft matter, though I have but little fear of immediate bad results (irritation) from leaving it, when it has not escaped into anterior chamber. I take great pains to clean wound edges of clot and cortex, and flood face of ball with bichloride freely before closing lids. Have never washed anterior chamber.

I cover eyes with plain absorbent cotton and figure 8 flannel bandage. In three days, or sooner if patient is restless, the sound eye is uncovered. I prefer that the patient keep his bed for three to five days, but do not insist upon it, if he be restless, or complain of fatigue. While in bed he lies in whatever position is most comfortable. Sunlight is excluded from the room, but no other attention is paid to amount of light. In uncomplicated cases no local applications are used.

My failures from inflammatory action number eight, viz., corneal suppuration, 3; irido-cyclitis, 3; panophthalmitis, 2. Partial failures have been due mainly to capsulitis and iritis.

For suppuration of cornea, frequent irrigation with sublimate solution, and Chininum arsenicosum internally I believe to be most effective; in capsulitis and iritis, atropine, frequently instilled, with dry heat. Internally, I believe Rhus to be most frequently called for. In irido-cyclitis, atropia, cold or heat, topically, and Rhus and Mercury internally. In suppurative irido-choroiditis, continuous cold, and Rhus internally at first; later, heat (moist) and a free incision.

In probably two-thirds of my cases a discission is done; it being more frequently necessitated on account of the peripheric capsulotomy.

C. H. VILAS, M.D., CHICAGO.

In operating for cataract, I endeavor to avoid extremes of heat and cold, but beyond this precaution have no special reasons from choice.

Unquestionably extreme old age, vicious habits, or a general failing of the physical powers, must to a greater or less degree affect the chances of recovery; yet experience teaches that the presence of all these is not a bar to success.

I have no statistics to show comparative success in operating on cataracts at the various stages in which they come for operation, and I presume it to be needless to say that I prefer them at the time when separation of the lens from the capsule takes place.

I perform iridectomy at the time of extraction, and from experience so far see nothing gained by one preliminary.

If the local conditions are seemingly perfect—no mucocele, no trachoma, etc.—I have found little or no demand for antiseptic measures. When necessary, mercuric bichloride is my favorite, though by no means only, antiseptic.

I prefer cocaine, a few drops of a 2 per cent. solution dropped in the eye a moment before operating, as an anæsthetic, and since its introduction have found little use for a general one. An occasional nervous patient has demanded ether or chloroform, but the well-known disadvantages of the disabled patient, after-vomiting, etc., render their employment a matter of careful thought. Except on the rarest occasions, I have never seen cocaine inefficient or troublesome; and as those occasions were early in my use of it, I am inclined not to blame the drug.

I know nothing better than daylight, and except from necessity in a few instances, have used no other.

I control the lids by a speculum, for the general reason that I prefer the mechanical device to an unsteady assistant. The disadvantages of a speculum are mainly overcome by having the handle extremity weighted so as to lift the lids from the globe.

I steady the eyeball when making the incision by grasping the conjunctiva with a fixation-forceps.

I rupture the capsule with an ordinary cystotome, usualiy at the periphery (though later I have been trying other methods), and deliver the lens with a delicate rubber spatula.

I cannot recall that I ever lost vitreous in an eye where the vitreous was of normal consistency but once, and that was in one of my early operations and caused by an officious anxiety to remove a piece of the capsule which experience has taught me was immovable. The result was unaffected, however, so far as I know,

I always let the cortical substance alone unless some imperative reason exists for its removal: taking great care that the angles of the incision, first, and the general wound afterward, are entirely freed from extraneous matter.

As regards bandaging and the bandage form, I have several times recently at some length expressed my views on the matter—once in a recent number of your journal. Discretion must be used in the selection of cases, but I incline to leaving off the bandage, as in many cases unnecessary. When one is used, the Vienna system of bandaging (long flannel roller, securely holding both eyes closed) is preferred. Many cases recover perfectly with no bandage and full light, with a few hours only spent in the bed; others require the recumbent posture and no light, to say nothing of the mental effect of being "well taken care of." I am of the opinion, on the whole, that right here the good-sense, skill, and tact of the surgeon will display itself, and that the results obtained will be in proportion to the experience of the operator. I use no local application after operating unless in my judgment an antiseptic or mydriatic is called for.

The commonest causes of failure are from the various forms of inflammation, which I endeavor to subdue both locally and generally. My experience with these forms of trouble has not been great enough to warrant my personal indorsement of the best methods, and, in such cases as I have had, I have followed the usually accepted ways.

All cases which do not afford as much vision as the state of the eye seems to warrant are subjected to secondary discission. So far I have never seen any bad result from so doing, while the good results are apparent in almost every case.

C. KNOX SHAW, M.D., LONDON, ENGLAND.

With ordinary precautions it seems to matter very little what season is chosen for operating on cataract.

I should say age, *per se*, has but small influence upon the after-result of an operation. The habits and constitutional condition of the patient are more important. I always look with anxiety upon the subsequent course of an operation on the intemperate, or on those prematurely senile. A long-standing conjunctivitis or blenorrhœa of the lachrymal sac should be a bar to operation until cured. My experience in operating on unripe cataracts is small, but I am disposed in such cases to gently remove the soft cortical matter by intra-ocular injections of sterilized water. There seems no special difficulty when operating on artificially ripened cataracts; Forster's method is of undoubted value, and I have several times employed it when the cataract had arrived at a state sufficiently advanced to prevent the patient from following any employment, and had remained stationary in this condition.

One would preferably operate on a mature cataract; an over-ripe lens requires a more careful "toilette" to insure the thorough removal of lens matter. An over-ripe cataract also is too often accompanied with a fluid condition of the vitreous; and dislocation of the lens is easily produced owing to the feebleness of the suspensory ligament.

My earliest operations were made without an iridectomy, the method employed being either that of Liebreich or Lebrun. When these operations are successful they certainly give a perfect result. The scar is scarcely visible, and there is a circular, mobile pupil. But I abandoned the operation in favor of the modified Graefe section, because of the danger of entanglement of the iris in the cicatrix,

and the difficulty occasionally met with in getting the lens to present. If I am particularly anxious about a case, owing to there being only one eye, or from some other cause, I endeavor to persuade my patient to let me do a preliminary iridectomy, as I think this eliminates certain risks from the operation. Otherwise my usual plan is to perform an iridectomy at the time of extracting the lens. The greatest amount of success will be achieved by the surgeon thoroughly perfecting himself in one mode of operating.

Cleanliness is essential, and this is best carried out by the use of antiseptics. The lids, eyebrows, and conjunctival cul de sac should be well flushed with perchloride lotion, 1 to 5000; the instruments being kept in boracic acid lotion.

Since the introduction of cocaine I have invariably produced local anæsthesia by a 4 per cent. solution of that drug. But I should not hesitate, in an unruly patient, to use ether or the A.C.E. mixture. Cocaine has been accused of producing a turbidity of the surface of the cornea, leading sometimes to a loss of epithelium; but this occurs from using the solution too strong or from exposing the eye to the air during the production of the anæsthesia. Until the moment of operating, therefore, the eyes should be kept covered with a wet antiseptic pad.

I always operate by daylight; if that is not possible I would postpone the operation. Having become accustomed to the modified Graefe operation upward, and being well satisfied with the after-results, I see no reason at present to adopt any other; though I look upon a cataract extraction without iridectomy as the operation of the future.

The lids are usually controlled by a speculum, as I prefer, as far as possible, to be independent of assistants. The eyeball is steadied by fixation forceps placed opposite and a little below the point of puncture; as soon as the section is completed the forceps are removed, and are only in exceptional cases used again during the operation. The section is more accurately made if the eyeball is steadied by the forceps.

The capsule is generally ruptured by a triangular incision,

the apex of the incision being downward. Removing the speculum, the upper lid is gently raised with the index finger of the left hand, and the patient is directed to look downward; a tortoise-shell curette is then taken in the thumb and finger of the right hand, and with the third finger the lower lid is drawn down. Slight pressure, through the upper lid, on the eyeball above the section causes the wound to gape; and then if gentle pressure be made with the curette on the lower third of the cornea the lens will be rapidly and easily delivered.

Vitreous is lost in about 10 per cent. of my cases, but less now than in the earlier operations; if only moderate in quantity it does not seem to materially affect the after-result.

I believe in making a careful "toilette" before closing the lids; loose cortical substance should be removed by gentle manipulation of the cornea with the curette; the cut edge of the iris ought to be carefully replaced, and any blood clot removed from the line of incision.

Since reading Dr. Chisolm's article in the *Lancet*, Aug. 14, 1886, I have discarded, in nearly every case, bandages, and have used salicylated silk plaster (Seabury & Johnson's), finding the shape suggested by Mr. Snell the most useful. The patient is put to bed and kept perfectly quiet for twenty-four hours, after that greater liberty is allowed; the light of the room is only slightly modified, and no external application is used immediately after the operation. By these means recovery seems hastened, and the eye does not remain so long sensitive to light as when it is more securely bound and kept in darkness.

I know of no common cause of failure; perhaps iritis and irido-cyclitis occur the most frequently. I have been struck with the frequency with which I meet with astigmatism in my cases; this is most likely due to some peculiarity in the technique of my operation, but its correction adds materially to the good result obtained by the operation.

Should any pus appear I order at once frequent antiseptic applications combined with Hepar, Sulph. internally. If

pain indicates iritis, Aconite and Rhus are prescribed and atropine used locally. When panophthalmitis is established nothing can be done.

I am unable to speak precisely, but I think I needle about 10 per cent. of my cases.

RÉSUMÉ.

We have been somewhat disappointed in the fact that some of our good men, many of them belonging in New York City, have not been able to find time to formulate their experience ; also in the fact that many of the respondents have contented themselves with simply saying that they used the "usual methods" in combating the various difficulties occurring in the treatment of the cataractous eye. Our object was, if possible, to bring out the individual experiences, the pet proceedings, of the operators. Many physicians commonly practice certain expedients for the accomplishment of given results, which they have learned from personal observation and which they scarcely realize are not in general use. The lamented Dr. Liebold was a striking example of this fact ; his mind was stored with a large amount of special bits of appropriate and usually successful procedure for all imaginable emergencies, and those of us who were so fortunate as to have been associated with him on the staff of the New York Ophthalmic Hospital have frequently been indebted to him for valuable hints. It was with this idea in view that this article was projected, and while not so successful as we had hoped in this direction, we still think it will be of value as an index of the methods and success of the average operator who does not see the extremely large number of cases which are only to be encountered at the great centers of the world.

Respecting the best time for operating, opinions differ according to locality; the main fact seems to be the necessity of being able to keep the patient comfortable, avoiding the restlessness which is apt to result from the heat of midsummer ; the only objection to cold weather being the possibility of the contraction of some form of catarrhal af-

fection which should interfere with the repose of the patient, or the immediate danger resulting from violent efforts at coughing before the closing of the incision.

According to the large majority of the reports, the age of the patient in years exercises a very slight influence on the chances of success, providing that he be in a good state of preservation; in this, as in all other surgery, the man who has lived a quiet, temperate life, even if not robust, finds his reward in a greater healing power and a lessened liability to inflammatory complications at any age. On the contrary, the dissipated and prematurely decrepit person is regarded by the general consensus of opinion as the most unpromising.

A plethoric condition is mentioned as liable to occasion trouble, probably from the liability to cerebral congestion, which is increased by the confinement in bed. Two or three excellent observers seem to be especially afraid of the diabetic patient, while the effect of nephritis, in the opinion of the writer, has hardly been given proper weight. In this connection it may be interesting to mention a case which occurred in the New York Ophthalmic Hospital about twelve years ago. A woman, apparently in good health, of very stout habit, and probably about fifty-five or sixty years old, was operated for cataract and put to bed; everything progressed favorably for a day or two, when she began to sink without any apparent reason, and in less than a week after the operation she was dead. A test of the urine revealed a large amount of albumen and other evidences of renal disease, but no treatment was of any avail in staying the fatal result. The post-mortem revealed an advanced stage of kidney disease, although her family had no knowledge of any previous manifestation of it. It was evident that the shock to the nervous system, resulting from mental excitement, fear, and the effects of the anæsthetic administered, had precipitated a catastrophe which had been held in abeyance by the repose and freedom from exposure of the patient's ordinary routine.

Although as a rule reasonable deductions as to probable

results may be made from the physical condition of the patient, still surprises sometimes occur both ways. Occasionally an individual with everything apparently in his favor will develop some unexpected obstacle to success, while on the contrary we meet with most unpromising cases which surprise us by healing promptly with excellent vision. As an instance of excellent healing power under anomalous conditions may be mentioned a hospital case of Dr. Liebold's, operated about 1881. The patient was a very old man who was decrepit simply as a result of his age. He was operated successfully, but evidently had not sufficient vitality to recover from the shock, as he soon began to fail, and died in about two weeks. The cause of death was hypostatic pneumonia, but an examination of the cornea a few days previous to his decease revealed the fact that it had healed perfectly and with very little redness remaining.

All operators dislike cases in which a chronic conjunctivitis or a blennorrhœa of the sac is present, and it is eminently safe practice to remedy such conditions before attempting to remove the cataract.

Of course all observers favor the naturally ripened mature cataract as the typical condition for operation; still we imagine that the objections made by several of our correspondents to the unripe or artificially ripened lens may possibly arise from the fact that they have generally abstained from these methods of procedure and are consequently little experienced in handling them. The danger in the unripe variety consists in the fact that much cortical substance is left behind, but by making peripheral capsulotomy, and thus retaining the cortex in the capsule, we prevent the irritation of the iris, and have only to wait longer before performing the needle operation which is subsequently necessary.

We fail to see why there should be any particular objection to operating a cataract artificially ripened, and those of our operators who have practiced this manipulation have generally been satisfied with the result.

In the hypermature variety, the same precaution being

observed, there should likewise be no difficulty, except that here we may find the degeneration of the lens accompanied by a like condition of the vitreous and a general tendency to break down, which it may require considerable experience to foresee.

With very few exceptions the verdict is in favor of preliminary iridectomy. Even some of the surgeons who are obliged, by custom in their vicinity or for other reasons, to make both operations at one sitting, have expressed the opinion that the preliminary operation furnishes the largest possible measure of safety.

This is undoubtedly correct, not only because it is unwise to subject the eye to any danger, however slight, not necessarily connected with the removal of the cataract, but for the additional reason that occasionally some unsuspected idiosyncracy of the patient develops at the first sitting, which is not necessarily dangerous with the slighter operation, and the foreknowledge of which may enable us to successfully combat it when the critical period arrives.

Undoubtedly the early future will find the majority of surgeons removing the cataractous lens without iridectomy, but when the iridectomy is made, a regard for the best interests of the patient should make it preliminary whenever possible.

The value of antiseptic measures seems to be generally recognized, the only points of difference being the individual preferences as to the agent and method of using it. The majority favor the bichloride of mercury solution varying in strength from 1–2000 to 1–10,000, the former being used for instruments, the face being cleansed in most cases with a solution 1–5000, and when the fluid is used for flooding the eyeball as a rule nothing stronger than 1–6000 is used. In cleaning the instruments with the mercuric solution, as a rule the knives are excepted, as the fine edge is apt to be affected by amalgamation, and for this purpose alcohol or boracic acid is commonly used.

Some of the operators prefer to use boracic acid for flooding the ball, as in exceptional cases even weak solutions of

mercury may cause some irritation. In the New York Ophthalmic Hospital this practice obtains, the saturated solution being used, equal to about 4 per cent.

As an anæsthetic, cocaine stands unrivaled, except in occasional cases in which a nervous patient is so unmanageable as to make it dangerous to operate, when ether is brought into requisition.

The preference as to the mode of incision seems to be pretty evenly divided between Von Graefe's modified linear and De Wecker's further modification of this, the latter being slightly a favorite. The Liebreich incision upward, which was formerly used considerably, seems to have been abandoned, probably because of the greater degree of astigmatism which commonly results. None of the New York surgeons of the writer's acquaintance are at present using the typical Von Graefe section, the greater tendency to lose vitreous, together with the occasional annoyance produced by bleeding of the conjunctival flap and the possible irritation of the ciliary body having caused it to fall into disfavor, unless in exceptional cases. The De Wecker modification possesses most of the advantages of the other methods without their drawbacks. This incision is especially to be recommended when making the operation without iridectomy, as the more oval form of the flap allows of the more easy exit of the lens and facilitates the return of any portion of prolapsed iris. Both the speculum and fixation forceps seem to be in general use. The writer and the editor of this journal have never used either in making extractions after preliminary iridectomy, believing that all unnecessary irritation should be avoided, and having a competent assistant within reach to hold the lids. Since the introduction of cocaine and the use of antisepsis perhaps these precautions may be less imperative, but they certainly do no harm.

Among our correspondents nearly all of the various methods of opening the capsule are in use. Reports have been received from those who make the peripheral, V, +, T, , and ▽ incisions; of these the peripheral is advocated

by the largest number of men; the retention of any cortex remaining behind within the capsule, and the consequent lessened tendency to iritic complications, compensating for the large increase in the number of needle operations necessary, although with a certain class of patients this is a disadvantage, especially when, as is not infrequently the case, the operation must be repeated.

In delivering the lens, opinions are about equally divided as to the advisability of making the pressure above or below, although the manifest advantages of the latter method should be easily apparent to any one who has witnessed an operation in which the upper edge of the lens becomes engaged beneath the upper border of the incision and is pushed backward with it when the pressure is made at this point. By making the manipulation below, and at the beginning almost straight backward, the lens is tilted on its axis and its upper edge immediately presents at the incision, when by gently stroking the lower part of the cornea with the shell spoon it is easily coaxed out. In making extraction without iridectomy this method is still more useful, as the tendency of the lens is to come out more nearly at a right angle with the cornea and consequently to engage less of the iris upon its surface, the result being a lesser degree of prolapsus of that membrane.

The percentage of cases in which vitreous is lost varies from 2 per cent. to $33\frac{1}{3}$ per cent.; the operators reporting the highest rate of loss, use the Graefe modified linear incision, but this can hardly be used for comparison, as other surgeons making the same section report a very small percentage of loss. The general opinion is expressed that a moderate loss is not prejudicial to a successful result.

The removal of all cortical substance possible is advocated in nearly every instance, coupled in most cases, however, with the condition that protracted manipulation for this purpose should be avoided, as tending to bruise the parts and lessen the chances of success. One or two operators regard the removal of cortical material as of less importance unless existing in considerable quantity. Where the

peripheral capsulotomy is made it would seem that the necessity for extreme care in this respect should be less imperative; certainly, if much effort be required to effect removal, it should be let alone. Here it might be well to speak of the action of Senega in this connection, although it may be familiar to many of our readers. So far as the writer is aware, Dr. Liebold was the first to use this drug for the absorption of such soft matter as proved difficult of removal. In several cases the writer has seen excellent results from the absorptive powers of this agent, not only after extraction of the senile lens, but in cases of traumatic soft cataract, in which it seems to materially hasten the disappearance of the lens matter.

The necessity of careful cleansing and coaptation of the edges of the incision is generally acknowledged, and cannot be too thoroughly impressed on the mind of the young operator, although here again too much meddling is injurious.

In the matter of bandaging practice varies widely among the different surgeons. All methods seem to be in use, from the simple strip of plaster closing the lids to the complete compress bandage with flannel roller. This matter, as is suggested in some of the reports, should be more or less individualized according to the case. The even support furnished by the compress when properly applied is very grateful to some patients, while in others the bundling of the head is a source of irritation and restlessness, particularly if the state of the weather makes its warmth disagreeable.

Where no iridectomy is made, the possible prolapse of the iris into the wound might be considered an argument in favor of bandaging with a view of maintaining an even degree of pressure.

Confinement in bed is generally practiced, more or less liberty of motion being allowed, according to the temperament of the patient; in many cases enforced quiescence in one position is productive of a restless, feverish condition, which will do more harm than reasonable liberty. It is

much better to keep the patient comfortable, with mind at ease. Personally we have never seen any bad results which could be attributed to the posture of the patient. In one or two cases in which atropine has had a poisonous effect, the subject has arisen from bed, banged the head against the wall, fought with the nurse, and exhibited other little eccentricities without in the least affecting the result.

The dark room seems to be a thing of the past; of all the responses we have received, not one has advocated its use. The majority only take the precaution to prevent bright light shining on the patient. In hospital practice we have found that the light room hastens the recovery, the period which the patient formerly required to accustom the sensitive eye to the light being much abbreviated. Here the bandage plays some part, those eyes which are simply closed with plaster as a rule exhibiting less redness when opened than when warmth has been kept up by the bandage.

As local applications after operation bichloride of mercury solution, boracic acid, carbolized vaseline, atropine, duboisine and eserine are mentioned.

In the hospital we commonly flood the eye with boracic acid, warm saturated solution, before closing the lids, to wash out all detritus and clean the parts. When no iridectomy is made a solution of eserine 1–600 is dropped in before bandaging, to prevent prolapse of the iris. On the second or third day atropine or duboisine is instilled, the latter having been found useful as less liable to cause systemic symptoms which occasionally result from atropine. Two or three observers favor the use of ice after the operation and this has been the constant custom of the writer, with a view of keeping the head cool and preventing too much reaction. A spinal ice-bag is filled with cracked ice, wrapped in two or three folds of a towel, and the patient is told to rest the operated side of the head against it as he lies on the pillow. It is usually grateful and allays feverishness and restlessness. Where much manipulation has been necessary the ice-bag sometimes does wonders in preventing trouble. We have seen cases in which the iris was bound down to

the lens and where much bruising of that membrane as well as of the edges of the incision was inevitable, recover with very little reaction under this treatment. As a rule when the cold becomes disagreeable the bag is removed.

The commonest cause of failure appears to be the results of bruising of some sort, either by too small incision, too much manipulation, or the use of instruments within the eye. Under the use of antisepsis sloughing of the incision seems to be rare.

When inflammation has set in as the result of these causes warm applications are generally grateful and beneficial. The principal remedy mentioned in this connection is Rhus tox., which we in the hospital have also found to be the most universally useful drug at this period. The œdematous tendency which is commonly present in these cases is a characteristic symptom for the Rhus, and we prescribe it as soon as such a condition appears, and in the larger majority of cases with good results. One or two physicians have expressed themselves as being disappointed in its use, a fact which is difficult to understand after our long experience with it.

The note made by Dr. Norton of the usefulness of Allium cepa in neuralgic affections after cataract operation is worth remembering.. This was one of Dr. Liebold's prescriptions, and we have seen it act like a charm in many cases.

No special forms of treatment of diseases of the uveal tract, occurring a few days after the operation, appear, other than those commonly used for this variety of affections when presenting under other circumstances. The general consensus of opinion decides that panophthalmitis resulting from cataract extractions is beyond the reach of remedies.

The percentage of discissions reported, varies, from 10 per cent. to 66 per cent., and contrary to what might be expected some of the larger figures occur where free central capsulotomy is made.

In taking up this topic the idea has been not so much to present the routine of cataract operations as discussed in the general literature of the subject as to find out what was

being done, and what the differences of opinion were among the surgeons of our own school. For this reason the valuable investigations of Dr. Knapp and others, which are open to the whole profession through the medium of the special publications, have not been touched upon, as it is considered that all oculists are familiar with them, while the contributors to this article have, with few exceptions, rarely furnished any data for comparison.

The writer desires to return thanks for the assistance rendered by the gentlemen whose experience has been incorporated into this article, and to hope that they may be interested in its perusal.

A CASE OF HÆMORRHAGE INTO THE RETINA AND BETWEEN THE RETINA AND VITREOUS.

BY GEO. S. NORTON, M.D.

(WITH CHROMO-LITHOGRAPH.)

Mr. F. B——, a blacksmith, aged thirty-six, came to my clinic at the New York Ophthalmic Hospital, April 4, 1889. Questioning elicited the following history: Two months previous, the right eye had been struck by a piece of iron while at his work. The "eye had been sore" a few minutes after the injury, but the sight had remained good for about a week, when he noticed a cloud come over the vision from one side which gradually increased until the vision was lost.

Status præsens: R. V.=p. l.; L. V.=$\frac{20}{20}$. Right pupil is dilated *ad maximum* by atropine. The refractive mediæ are clear. The optic papilla is seen to be two-thirds covered by a hæmorrhage, which must necessarily be between the retina and vitreous. Through the retina are scattered many hæmorrhages of varying size and shape, while the retinal vessels have almost wholly disappeared, only scattered branches being seen here and there, Many of the vessels are bloodless and appear like white lines. The plate furnishes a good picture of the appearance of the fundus at this time, so far as the hæmorrhages are concerned, though the white lines have not been brought out sufficiently. As no encouragement of restoration of vision could be given the patient, he did not continue under my care.

On Dec. 13, 1889, he called again at my request. He then reported that his eye had remained unchanged in all respects from April to the fore-part of October, when, after a severe cold, the eye became inflamed; with severe pain at night. This was

pronounced "iritis" by a prominent oculist and treated with "drops and hot water." This relieved his pain, but as enucleation was recommended he discontinued treatment. For one month he had had no treatment. During this period the eye had been weak, but not painful, though would become red after reading. Examination of the eye made at this time revealed T + 1, pupil well dilated, and cornea hazy. The iris had a dull, lack-luster appearance, and on its surface at the periphery, outer edge, was a clearly marked network of blood-vessels, as may be seen in degenerated conditions of the iris after parenchymatous inflammation. Behind the pupil could be plainly seen a white mass, plentifully splashed with hæmorrhagic extravasations, filling fully two-thirds of the vitreous space. On account of the corneal haziness, blood-vessels could not be distinguished upon the mass, nor its characteristics clearly enough defined to decide whether the retina was detached or whether the condition was simply due to a degeneration of the vitreous. The diagnosis of secondary glaucoma was made and enucleation advised.

Remarks.—This case was of interest from two or three points of view. First, the history given by the patient indicates that though the injury was, in all probability, the starting-point of the trouble, yet the hæmorrhages were secondary, coming on at varying intervals after the injury. Again the position of the hæmorrhages between the retina and vitreous, as well as in the retina, without opacities in the vitreous, was particularly characteristic, and of interest from the rarity of the cases reported. The further course of the disease and the subsequent development of glaucomatous symptoms is not especially unusual, as I have, as well as others, observed glaucoma develop in several cases of long-continued and frequently recurring intraocular hæmorrhage.

Note.—To Dr. A. H. Hart, Assistant Resident Surgeon of the N. Y. Ophthalmic Hospital, I am indebted for the drawing from which this plate was made. G. S. N.

IRITIS AND CHOROIDITIS IN CONSEQUENCE OF UTERINE AFFECTIONS.

BY DR. PARENTEAU.

TRANSLATED BY S. LILIENTHAL, M.D.

At the Congrés International d'Homeopathique, held in Paris, Dr. Parenteau read an essay on iritis and irido-choroiditis in connection with uterine affections. Puberty, pregnancy, climaxis, and various uterine lesions may become the cause of ocular affections. Puberty produces dynamic troubles ; pregnancy and uterine diseases lead to exudative iritis and irido-choroiditis with multiple lesions. One of these lesions is *vitreitis*, characterized by an affection of the vitreous body, which remains unperceived on account of more pronounced symptoms, as iritis, synechiæ, etc. In young girls and women it may appear alone, accompanied by such trifling lesions that it takes the principal part. It attacks mostly one eye, showing itself sometimes at the moment when the menses become established, a little before or after the stoppage of the flow for several months. This may also happen during pregnancy. The patient observes a diminution of the clearness of vision, setting in suddenly, and is due to many points of opacity in the vitreous body ; there are no inflammatory phenomena in the neighborhood (sclerotica, iris), no pains, and the ophthalmoscope reveals uniform gray points at the fundus of the eye. The prognosis is rather serious, as the dark points may never disappear, and the treatment must be to reproduce and regulate menstruation. The principal remedy is Mercurius corrosivus, from the 1st to the 6th. When iritis is present, atropine must be dropped into the eye. Sulfur and Arsenicum may sometimes be indicated, but they are inferior to the corrosivus.—*L'Art Médical*, Sept., 1889.

REVIEWS.

Diseases of the Eye. A practical treatise for students of Ophthalmology, with colored illustrations from original drawings. By George A. Berry, M.B., F.R.C.S. Ed., etc. Octavo, pp 670. Philadelphia: Lea Brothers & Co. 1889.

This work, just issued by the well-known publishers Lea Brothers & Co., printed for them in Edinburgh by Young J. Pentland, proves to be a book well worthy of review in a special journal. No text-book of ophthalmology has yet made its appearance—and there has been an almost innumerable number of them in the past few years—but that has been open to criticism. This new aspirant for our favor, though among the best yet printed, is no exception to the rule, for perfection has never been and probably never will be attained. In this brief review we shall endeavor to fairly criticise the defects and render full praise when due.

The book is divided into seventeen chapters, in which are successively considered the following subjects: Diseases of the Eyelids and Lachrymal Apparatus; Diseases of the Conjunctiva; Diseases of the Cornea; Diseases of the Crystalline Lens; Diseases of the Iris and Ciliary Body; Diseases of the Choroid and Vitreous; Glaucoma; Foreign Bodies in the Eye; Sympathetic Ophthalmitis; Diseases of the Retina and Optic Nerve; Amblyopia, Amaurosis, and Other Anomalies of Vision; Intraocular Tumors; Diseases of the Orbit: Errors of Refraction and Accommodation; Affections of the Oculo-Motor Muscles; Examination of the Eye; Operations. Following this is a General Index and Index of Authors.

The first point to attract attention in examining the work is the large number of illustrations, of which there are 144, a considerable proportion of which are beautifully colored. For example, excellent original colored illustrations are to be found of the most important varieties of blepharitis, conjunctivitis, keratitis, iritis,

and different forms of cataract, in addition to the valuable ophthalmoscopic plates of the various forms of intraocular disease; all of which are placed in the body of the text so as to be constantly before the student as he reads. These illustrations, which, almost without exception, are unusually good, are alone sufficient to recommend the book to the student of ophthalmology. The author's style is also deserving of commendation, as he is always clear in expressing his ideas, thus never making the reading laborious.

In reading the book one first notes the omission of both normal and pathological anatomy, "except in cases where it has some direct bearing on the treatment to be adopted." The writer believes "any exhaustive discussion of the pathological anatomy of eye diseases tends to divert attention from their clinical aspects." This we consider a decided defect, for the student needs a knowledge of both normal and pathological anatomy to round out his understanding of ophthalmology, and this he must obtain elsewhere. The author does not wholly omit these subjects, and by a very little addition, even though in smaller type as in some of the theoretical portions, he could have made his work more complete.

The chapters devoted to diseases of the conjunctiva and cornea are the most unsatisfactory of any in the whole treatise, providing the illustrations were excluded. Only two forms of purulent conjunctivitis seem to be recognized, viz., gonorrhœal and ophthalmia neonatorum. Perhaps this may be the case in Scotland, but oculists in general find frequently purulent inflammation of the conjunctiva which cannot be classed under either of the above heads. The description of the gonorrhœal form of inflammation and of the gonococci which cause blennorhœa is clearly and quite fully given. The discussion of trachoma is incomplete, considering our present knowledge of the disease. Here, as well as in many other external diseases, much could have been gained by more pathological anatomy. Under the cornea, similar points are open to criticism. Some forms of keratitis are described in detail with the greatest accuracy, while upon the other hand more common affections, as for example ulcers of the cornea, are passed over in a most general manner.

Turning now to the uveal tract, we find a most marked improvement. No clearer picture of iritis or choroiditis can be desired in a text-book on ophthalmology. In the main, there is

little to criticise, though occasionally a statement will surprise one, as on page 166 the doctor says, referring to posterior sclero-choroiditis : "This disease is very much more common in the lower classes, so that the higher and most serious cases of myopia, unlike the more common form, in which the tendency to progression is not pronounced after full growth is attained, are found mostly amongst the illiterate, and not amongst such as use their eyes much for reading, or for any work necessitating convergence of the visual axis." Glaucoma, foreign bodies in the eye, and sympathetic ophthalmitis are most ably discussed.

The excellent chapters upon the retina, optic nerve, amblyopic affections, and intraocular tumors require only words of praise. Like some English writers upon toxic amblyopia, we believe the doctor dwells too strongly upon the effect of tobacco upon the optic nerve and too little upon the influence of alcohol. With diseases of the orbit, Section I. closes.

Section II. is devoted to the refraction and accommodation, affections of the ocular muscles, and the examination of the eye. Much of the theory of refraction and accommodation is given, though in smaller type, thus making the discussion of these subjects very thorough for a general text-book. The chapter upon muscular disorders is as full as in ordinary works upon ophthalmology, but most imperfect when we consider the recent advances made in this department.

In Section III. are considered the various operations upon the eye. This arrangement of the operations together renders repetition unnecessary, and is therefore to be commended. The author still adheres to the modified linear extraction of Von Graefe, and considers the advantages of extraction without iridectomy as "more imaginary than real." The less said in relation to the treatment recommended for the various diseases, the better ; it is often crude and sometimes most markedly so, as for instance where the daily use of nitrate of silver (10 gr. to ℥ j) is advised for ophthalmia neonatorum.

Taking the book as a whole, however, we most heartily recommend it to the profession and the student of ophthalmology. We consider this treatise by Berry and the one by Schmidt-Rimpler as the two best text-books we now possess upon ophthalmology ; where one is weak the other is strong. In Schmidt-Rimpler we find both normal and pathological anatomy quite fully given,

while at the same time diseases are described in their minutest details, but with such remarkable condensation that less space is occupied than in any other work yet published upon this subject; all of which, with the endeavor to follow literally the German in the translation, renders the reading of the book a somewhat difficult study. In Berry, although all the minutiæ of the subjects may not be presented, yet we find a style easy and entertaining, which together with the colored illustrations renders his text easy to comprehend and a pleasure to read. N.

OPHTHALMOLOGY AND OPHTHALMOSCOPY. By DR. HERMANN SCHMIDT-RIMPLER, Professor of Ophthalmology and Director of the Ophthalmological Clinic in Marburg. Translated from the third German revised edition. Edited by D. B. ST. JOHN ROOSA, M.D., LL.D. New York: Wm. Wood & Co. 1889.

This is a handsome volume of 571 pages, forming one of the series now in course of issue by this house, entitled "Specialties in the Practice of Medicine."

The book consists of four general divisions; these are subdivided into chapters, each of which is complete in itself.

Of the three chapters included under part one, the first is devoted to a a *résumé* of the various methods of examination of the eyes, followed by a general consideration of the rules of medical treatment as applied to ocular disease; while the succeeding section takes up the subject of refraction and accommodation, with an elementary statement of the principles of physical and physiological optics.

The usual classification of amblyopia and amaurosis under diseases of the optic nerve is departed from in this instance, and these affections, together with the description of the normal visual field and the light and color senses, receive attention in the concluding chapter of this division.

In Part Second, Ophthalmoscopy; Ophthalmoscopic Appearances in the Healthy Eye; Diseases of the Optic Nerve, Retina, Choroid, and the Vitreous Body, are considered in the order named; the second chapter covering also the normal anatomy of the structures above mentioned.

The opening chapter of the third division is devoted to Glaucoma and Essential Phthisis; the Diseases of the Lens, Conjunctiva, Cornea, Sclera, Iris, and Ciliary Body also find a place

here; the section considering each part beginning with its anatomy except in the case of the iris and ciliary body, which are included with the choroid in the general description of the anatomy of the uveal tract in Part Second.

Part Fourth consists of four chapters, devoted in turn to the Anatomy and Diseases of the Ocular Muscles, Orbit, Eyelids, and Lachrymal Apparatus.

The general directions for examination and treatment in the opening chapter are briefly but carefully given; much information is crowded into a small space.

The writer's medical measures are up to date, although some antiquated procedures which should be out of date are still given a place. The various uses of cocaine are mentioned, and the value of asepsis in the highest obtainable degree is insisted upon.

In the consideration of myopia the author claims that in the large majority of cases of this form of ametropia the eyes are free from disease, a statement with which his editor takes issue, and in so doing he is undoubtedly correct. There can be very little question that the larger number of such eyes are diseased, at least in the United States.

Considerable space is given to prophylaxis in myopia, the factors of light, posture, occupation, school accommodation, reading text and writing materials being accorded the weight due to their relative importance.

Both the author and editor take exception to the common habit of using a single instillation of atropia with the expectation of developing the total hyperopia, as practiced by many oculists during their office hours. The statement of the editor that at least three days' use of a 4-grain solution is necessary, and sometimes the drug must be continued for six days before the accommodation is completely paralyzed, is certainly not extreme; the writer has several times seen cases in which this condition was only attained after a period varying from three to six weeks.

Under mixed astigmatism, on page 86, the author attempts to do away with the necessity for bicylindric lenses by substituting sphero-cylinders. In a supposititious case there is M=2D. in the vertical meridian, H=1D. in the horizontal meridian. This he corrects by concave $2D^s$. ⊓ convex $3D^c$. axis vertical, first increasing the H. to 3D. by the spherical lens, and then neutralizing it with the cylinder of 3D. We fail to see any compensation for

the inelegance and increased weight of spectacles made after such a prescription. In the extremely substantial frame used in Germany such a difference may be of no consequence, but in this country lightness and grace are secondary only to the attainment of the optical necessity.

The recommendation of Green's clock-face figure for the detection of astigmatism must at the present time be received with caution, as we have frequently found that in the slighter degrees, which the use of the dioptric system of lenses enables us to correct, the lines in the star figure are too large for use at twenty feet, and such patients see them all alike ; the advice of the author to carry the card off to a sufficient distance to show a difference in the lines is generally impracticable in the physician's office, as even twenty feet is here often unattainable.

The differentiation of "abnormal accommodative tension" from true spasm is a point well taken, and especially so is the fact, to which attention is drawn, that in the latter the near point is always approximated to the eye, which is not the case in the former condition.

More than the usual amount of space has been devoted to ophthalmoscopy. The different forms of the ophthalmoscope are described, and the various methods of using it are carefully explained ; among other things, the author's method of measuring refraction in the inverted image, which may be accurate enough, but which will hardly come into general use because of the manipulation and machinery which are necessary.

In considering embolism of the central artery of the retina, it would seem that some attention should be called to the marked similarity of the ophthalmoscopic appearances to those sometimes found in hæmorrhage into the optic nerve sheath, a similarity so striking that it has been the occasion of much discussion. The writer has seen at least one such case in which two prominent ophthalmologists were at variance as to which was the correct diagnosis. In the present article the latter condition is barely mentioned in five words, and only then among several others.

In the article on the pathology of glaucoma the author presents a somewhat confused mass of theories as advocated by different observers which tends to produce a rather chaotic condition in the mind of the average reader. The statement is made that in the writer's own opinion "a series of causes may give rise to the

glaucomatous process in general, but that one or the other occupies the foreground in each individual case." Be this as it may, he evidently has very little use for the filtration doctrine as a prime cause of the disease, as on page 300 he says: "At all events the occlusion of Fontana's space can hardly be regarded as the most important cause of the glaucomatous disease." The instances he cites in which an "application of the periphery of the iris to the filtration angle, with narrowing of the chamber," occurs in "slightly phthisical eyes with diminished pressure," prove nothing, as in these cases there is undoubtedly a neurotic condition present which interferes with secretion, and therefore the partial closure of the iritic angle need not produce any increase of tension.

Although we may not be able to follow the advocates of this theory in all their conclusions, the fact remains that the only procedures, either medical or surgical, which offer any certainty of success in the treatment of glaucoma are those which operate by opening the channels of filtration, and if this object be not accomplished, the result, except in cases too rare to be important, is failure.

We notice that the author still keeps his cataract patients in bed in a darkened room from eight to ten days before he allows them to sit up; in which fact he is somewhat behind the times.

The author is not up to date in many of his statements concerning muscular anomalies. When he recognizes no element but accommodative strain in asthenopia from hyperopia on page 81; and when he gives us the old dot and line test and the test of the power of adduction by prisms with the base out as the only means of detecting weakness of the recti interni, we feel like recommending the purchase of a phorometer.

On page 487 he says that on the average the recti interni can only overcome a prism of 13.2°, and on page 523 we are informed that "no improvement can be expected as a general thing from exercise of the interni," yet the writer habitually trains the internal muscles in cases of exophoria until they can overcome prisms of 60°, and in one case was obliged to go to 90° before equilibrium was reached, and this is done by "exercise" with prisms of increasing angles, and not only this, but the recti interni are the muscles above all others, which can be improved by exercise. In this connection the editor gently pronounces anathema

upon the "over-credulous" who believe in the "modern doctrine," which simply shows that he has not yet completed his personal experiments in this direction.

As a general statement the work is an excellent one, but although the author states in his preface that it is intended as a guide for students, this class of readers will occasionally find subjects which are not sufficiently elucidated for their understanding. As instances of this fact might be mentioned that while in the article on punctate keratitis this disease is spoken of as distinct from true descemetitis, the latter disease, although entirely different from the former, is nowhere described ; again the amauroses due to tobacco and alcohol are only mentioned as causing scotomata, no further information is given. The iritic angle is not explained as to its anatomy or relations, although frequently alluded to in other connections.

The author's style is exceedingly concise, and he has crowded a vast deal of information into a comparatively small space ; there are very few subjects in ophthalmology which have not been at least touched upon, and with some few exceptions the production is fully up to the present standard of the science and is well worthy of careful study. One hundred and eighty-three wood cuts, many of which are new, and three excellent colored plates of diseases of the fundus, are contained in the volume.

The work of the publisher is well done, the type is clear, the paper excellent, and the binding neat and substantial ; the book is a credit to the house from which it emanates. D.

A Treatise on Diseases of the Nose and Throat. In two Volumes. By Francke Huntington Bosworth, A.M., M.D. Volume I., Diseases of the Nose and Naso-Pharynx. New York : 1889. Wm. Wood & Co. pp. xviii. 670.

This volume forms one of the series now being issued by Messrs. Wood & Co. on Specialties in the Practice of Medicine. The subject is presented in three sections,—Diseases of the Nasal Passages ; 2, Diseases of the Naso-Pharynx ; 3, External Surgery of the Nose. It is illustrated with 182 wood-cuts and four colored plates.

The first chapters are devoted to the consideration of apparatus for examination, and treatment of the upper air passages, and offer the student a fair *résumé* of the various instruments and manipula-

tions. The author recognizes the fact that any method of examination is largely a matter of preference on the part of the operators that there is no great advantage in any, if one knows just what he wishes to see, and that the simpler the apparatus the easier, the attainment of the desired result.

Dr. Bosworth uses the following significant words (p.41): Speaking of devices for atomizing fluids. . . . "it has been a broadly prevalent impression that our success in the treatment of diseases of the upper air passages was largely dependent upon the elaborateness and perfection of our mechanical devices. Furthermore a good deal of importance has attached, in the minds of many, to the pressure of the air by which the fluids are atomized, the ground being taken that at a pressure of fifty or sixty pounds atomized fluids come more thoroughly in contact with the membrane lining the sinuous passages of the nose, and are so driven farther down into the bronchial tubes, the idea still being held that local applications constitute the essential element necessary for the cure of catarrhal diseases. This I believe to be an entire mistake. A catarrhal inflammation as a rule is not cured by the local application of astringent, alterative, stimulant, or other remedies," etc.

Chapters III. and IV. are reprints of portions of his earlier work, and need no comment here unless it be to quote his words (p. 63): "Perhaps the very worst place on which to wear the so-called chest protectors . . . . is on the chest. The chest is infinitely better protected in one liable to bronchial attacks, by an extra sole worn on the boot. . . ."

Regarding the use of Thudichum's nasal douche, the author, while discouraging it in hypertrophic rhinitis, says that in cases of atrophic rhinitis, where danger of middle ear disease is absent, he sees no reason for hesitating to recommend it.

The chapters on the anatomy of the nose and of the naso-pharynx are well written, and the former especially, is well illustrated with cuts taken mainly from Sappey and Zuckerkandl. The difficulty of obtaining a definite idea of these irregular cavities can only be overcome, in the absence of dissecting material, by studying numerous illustrations of sections, made in all directions. Many of the pictures of the bony framework we do not consider worth reproduction in a text-book, especially such as Figs. 59 and 60, which represent occasional and probably abnormal conditions, which could easily be indicated by descriptions. The cut (Fig.

61), too, from Max Schultze, might be well replaced either by a photo-micrographic cut, or by a more clearly diagramatic representation. The nerve-supply of the mucosa is well described, but is a subject which needs much further research to establish more clearly the reasons for the numerous nasal reflexes.

While the anatomy and physiology of the pharyngeal vault are well presented, the author does not give due consideration to the idea that the so-called hypertrophy of Luschka's tonsil may be at certain ages its normal condition, though he does say, further along, that the disease—*i.e.*, hypertrophy of pharyngeal tonsil—is probably not infrequently congenital. Trautmann* shows that the pharyngeal tonsil itself belongs rather to child life, and normally atrophies. Dr. Bosworth believes evidently in the accidental origin of the bursa pharyngia, thus indorsing the objections of Ganghofner and Schwabach to Luschka's opinion that it has a definite physiological function.

The chapter on the Physiology of the Nose is an important one as indicating the line of argument used to-day by those rhinologists who look to the nose as the real seat of disease in so many more general troubles. Grehant's, Aschenbrandt's and Kayser's experiments are referred to somewhat in detail, and the respiratory function of the nose is held to be the most important.

Chapter seventh considers general catarrhal diseases, and in it we find an excellent essay on the misuse of the term catarrh. The author does not believe in the existence of a catarrhal diathesis. Subsequent chapters are devoted to the special diseases of the nose, acute rhinitis heading the list, hypertrophic rhinitis following. This subject is of great interest to specialists, because of the diversity of opinion as to treatment ; so we turn directly to that portion of the chapter—passing in so doing several of Zukerkandl's cuts, and more of the author's, in the last one of which (Fig. 70) we see an undoubted hyperplasia spoken of as an hypertrophy. This confusion of nomenclature should be deprecated because it may lead to wrong treatment in many cases.

In the treatment of hypertrophic rhinitis the author considers first the value of local applications, which he depreciates, because he considers that the indications are " deposits of connective tissue in the inter-vascular tissues " (hyperplasia). He holds to the use

* Anatomische, Pathologische, und Klinische, Studien über Hyperplasie der Rachentonsille, etc. Berlin : 1886.

of water applications, when any are used, thus antagonizing many who decry the use of water or watery solutions, as means of local medication.

Regarding the use of caustics the author gives his own views as well as those of others in the following words: "Until quite recently our caustic applications were effective simply by the contraction of the superficial slough formed. By this contraction the calibre of the venous sinuses was diminished, and the walls of the vessels enabled to regain their proper tone. Since the discovery of the wonderful power which cocaine has of contracting blood-vessels, our caustic applications have been much more efficient. The ordinary procedure is by an application of cocaine to deplete the vessels by diminishing their calibre; then, by applying caustic to the most prominent points, to pin down the already contracted tissue by the formation of a superficial slough, maintain the vessels in a state of contraction until they can regain their normal tonicity, and thus control nutrition." This is a sort of tufting process such as upholsterers use. For this purpose chromic acid is recommended, and the author applies the crystals by means of a slender probe first dipped in mucilage and then in the chromic anhydride crystals. Dr. Sterling, of Detroit, Mich., by the way, uses the heated probe brushed over sealing-wax, to pick up the crystals of the anhydride. The galvano-cautery is also recommended, but no special preference is given it. As to the use of the cold snare for the removal of redundant tissue, nothing is better.

The next chapter treats of the purulent rhinitis of children. For this condition is recommended the use of "some simple lotion" as a cleansing application. Dobell's solution or an alkaline solution containing listerine, a saline solution with thymol, or a mildly alkaline solution with icthyol, is recommended to be applied by means of an atomizer. Following this an astringent application is advised. General hygienic measures are also indicated, but internal medication, beyond perhaps cod liver oil, is not advised.

In the chapter devoted to atrophic rhinitis we meet with nothing new; and we fail to find reference to Dr. Garrigou-Désarene's work on the application of the galvano-chemical-caustic in such cases.

Passing over the chapter on Croupous Rhinitis, we come to Chap-

ter XIII., on Nasal Reflexes, which is especially interesting as giving the views of many physiologists and rhinologists regarding this important subject ; and here we must commend the author's numerous bibliographic references, which very materially add to the value of the book.

Dr. Bosworth believes that successful results are due primarily and mainly to the removal of the local intra-nasal disease. At the same time, as the neurotic habit is a prominent factor in the production of these disturbances, he recommends the use of constitutional remedies, while he rather discountenances the use of Iron, Strychnia, and general tonics in absence of specific indications. Following this chapter comes the subject of Hay Fever, in which, after twenty-two pages of text relating to pathology, the author considers the treatment, under three heads : 1, General, for correction of neurotic habit ; 2, Local treatment of diseased nasal tissue ; 3, Treatment of the exacerbation.

The general treatment includes the administration of Belladonna, Zinc, Arsenic, Phosphorus, Strychnia, Hydrocyanic acid, Valerian, Assafœtida, Musk, Lobelia, Amber, Bromides, Iodides, Chloral, Opium, Hyoscyamus, Quinine, and Iron.

Of the local treatment, the author, after giving the views of others, says : "The sensitive areas described by John Mackenzie I have never been able to locate as such, and still adhere to the belief that the indications for treatment are the reduction of inflammation and the removal of obstructive lesions, and not the control of an hyperæsthetic condition of the nose." It is but fair to notice in this connection that the author's per cent. of cures is less than that of the other writers quoted by him.

In the treatment of exacerbation the author advises the use of cocaine hydrochloride, and does not acknowledge the production of any reaction as claimed by Beverly Robinson and recognized by many others. Neither does he mention any possibility of constitutional disturbance, nor of possible acquirement of the cocaine habit.

He furthermore in the next chapter recommends cocaine in the treatment of the asthma which so often accompanies the exacerbations of hay fever. This is contrary to the reviewer's experience, which leads him to believe that the use of cocaine in certain cases actually favors the onset of the asthmatic attacks.

For anosmia the galvanic current is recommended, but neither is

the strength noted beyond "beginning with a weak current, and increasing the strength according to tolerance,"—nor is the pole to be applied to the nasal mucosa indicated—but as the author goes on to say that "faradization will give even better results than the continued current," he would seem to consider electricity as merely a *thing* to be applied.

In the chapter on septal deformities, Dr. Bosworth makes a strong point against the use of the drill, gouge, punches, etc., and one in favor of the saw; when he says that in only one case of all his own has he cut through the septum, this as he says, "illustrates the fact of its (the septums) marked thickness at its point of fracture."

The chapters on epistaxis, foreign bodies, rhinoliths, and parasites contain nothing specially noteworthy, nor in fact do any of the special chapters following, until that on naso-pharyngeal catarrh is reached, where the author lays himself open to criticism by saying: "The radical cure of the disease depends, I think, altogether on certain local measures, applied directly to the seat of the disease." This statement is not only opposed to the experience of many others, but to one of his earlier statements already quoted.

Section third, on the external surgery of the nose, has much to commend it in the way of illustrations, but presents nothing new in the text. L.

ANNUAL OF THE UNIVERSAL MEDICAL SCIENCES. Edited by CHARLES E. SAJOUS, M.D., and seventy associate editors, assisted by over 200 corresponding editors, collaborators, and correspondents. Illustrated with chromo-lithographs, engravings, and maps. Volume V. F. A. Davis. Philadelphia: 1889.

The first appearance of this Annual in 1888 received a most favorable welcome from the profession in general. This second yearly report will no doubt receive more generous support and more earnest praise, for many additions and some important changes have been made which enhances its value. Its claim to be "A yearly report of the progress of the general sanitary sciences throughout the world," is well sustained, providing one excludes all progress made outside of the one school of medicine (allopathic) here represented. If the editor and publisher would extend the field of their labors and select the best from all schools

and isms, it would greatly increase the value of the work. These five volumes represent an immense amount of work, for they contain the most important advances made during the year in all departments of medical science, as gleaned from the perusal of 756 journals and 235 books, monographs, theses, transactions, etc.

Turning now to the eye, ear, and throat, in Vol. IV. much of interest in these specialties will be found. Ophthalmology occupies 170 pages; otology, 56; diseases of the nose and accessory cavities, 38; diseases of the pharynx, tonsils, and uvula, 16; intubation of the larynx, 12; diseases of the larynx, trachea, and œsophagus, 44. In a report so condensed, the abstracts have necessarily been brief, but yet the main points have been so clearly stated, that a fair knowledge of the subject can be obtained, while the references given enable one to easily refer to the original. The engravings and chromo-lithographs, which illustrate these departments, are of decided value and of marked interest to those who have not access to all foreign publications; they also compare favorably with similar productions in our best special journals.

Both editor and publisher deserve credit for the able manner in which the work has been done and presented to the profession. We take pleasure in most heartily recommending the work, not only to the general practitioner, but also to the specialist. N.

De l'Enclavement de l'Iris Consecutif à l'Extraction de la Cataracte. Par le Dr. Borry. J.-B. Brillière et Fils. Paris: 1889.

Dr. Borry presents us with a brochure of nearly 150 pages, ostensibly with the purpose of studying the history, the statistics, the etiology, the pathogeny, and the prophylaxis of hernia of the iris consecutive to cataract operations. The author takes opportunity, however, to incorporate in his work a savage attack on the modified linear section of Von Graefe. Evidently he has been incited to this bit of Franco-Prussian warfare by his teacher M. Gayet, of Lyons, who practises a modification of Daviel's method. To accomplish the purposes of this criticism the author cites all the *unfavorable* statistics of French and German authorities which have a bearing on Von Graefe's operation, and cites these statements in such a way as to leave the impression that a greater percentage of prolapses of the iris may be attributed to the modified

linear section than to modifications of Daviel's method. In giving the etiology of the accident, however, Dr. Borry carefully avoids attributing to the *mode* of operation any share in the production of hernia. Thus he stultifies himself. Besides, the author has not been entirely fair in his criticisms, for we have taken the trouble to refer to some of his references in the French text-books and in *La Revue Clinique d'Oculistic* (1880–1887), and find that when the authority quoted yields a point, as favorable to Von Graefe's operation, he carefully avoids it in his quotations.

Aside from this bias of opinion there is much of value on the pathogeny and prophylaxis of hernia of the iris. For proper understanding of the scope of the work, we ought now to give the correct meaning to "*enclavement*" of the iris. Thus the author distinguishes "*enclavement*" from simple hernia of the iris consecutive to cataract operations. By hernia of the iris, and its synonyms, procidentia and prolapsus, he intends that protrusion of the iris into the corneal section which is coincident with the operation. By "*enclavement*" he designates the prolapse of iris into the wound when occurring after the operation. Thus he explains: "A patient has been operated on for cataract; he remains under the double bandage; the next day or the day after, or even later, according to the operator, one proceeds to the first dressing. It happens sometimes, from causes that we will try to determine, agitation, traumatism, etc., that the wound, instead of being smooth and regular, is lifted up at some point; the occlusion is rendered imperfect by the presence of a blackish projection of variable volume: this is an '*enclavement*' of the iris."

From the author's discussion of the pathogeny of this secondary occlusion of the iris the following conclusions may be drawn:

(*a*) The hernia of the iris is nearly always a purely mechanical accident due to the elevation of the intra-ocular pressure.

(*b*) This hypertonus may be either primitive or reflex.

(*c*) During the course of the extraction the elevation of the tension may be caused by any one of the stages of the operation. It is of advantage then to simplify the processes of extraction.

(*d*) In the days which follow the operation, the hypertonus may be due to various causes, the most important of which are, in the order of frequence: (1) a transitory glaucomatous state, which it is necessary to connect to an hypersecretion or to a de-

fective excretion of the aqueous humor; (2) the swelling of the débris from the crystalline; (3) spasms of the ocular muscles.

(*e*) Atropine does not appear to have as great an influence in the production of secondary prolapse of the iris into the corneal wound as has been generally attributed to it.

(*f*) Eserine acts as a preventative of this accident only within narrow limits.

(*g*) The most certain means that we have at our disposal to prevent hernia of the iris after cataract operations are; (1) cocaine, by lowering the intra-ocular tension and facilitating the operation; (2) lavage of the anterior chamber, combined with methodical massage over the pupillary space, both contributing to carry the débris out of the anterior chamber.

H. H. Crippen.

MISCELLANEOUS NOTICES.

It is with sorrow that we record the deaths of three men whose names have long been prominent in the special departments.

Prof. Julius Jacobson, of Königsberg, was well known in ophthalmology for many years.

Prof. Maurice Perrin, of Paris, an eminent writer upon ophthalmology, died August 31, 1889.

Prof. Voltolini, of Breslau, Germany, died Sept. 10, 1889, at the age of seventy years. No man ever obtained a wider or more well-earned reputation in otology, laryngology, and rhinology than did he.

A circular letter received from Dr. H. H. Crippen of San Diego, Cal., announces that he is collecting information from all oculists upon the value of internal medication in the treatment of glaucoma. We trust that all interested in ophthalmology will respond to the doctor's appeal.

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NOTES ON THE EXTRACTION OF CATARACT.*

BY F. PARK LEWIS, M.D., BUFFALO, N. Y.

With no operation in surgery is the ophthalmologist more concerned than the extraction of cataract, and no operation, owing to modern improved methods, gives greater promise of success.

This result is largely due, I should say, aside from constantly increasing technical skill, to, first, the introduction of local anæsthesia of the eye; second, the more general adoption of antiseptic measures; and, third, a return to the Simple Extraction.

In a very brief way, I wish in this paper to call attention to three points: First, the superior advantages of extraction without iridectomy. Second, the division of the posterior capsule immediately after the extraction of the lens. Third, a simplified method of dressing.

It will be remembered that the old flap operation, which was employed when Von Graefe introduced his modified linear method, was relinquished because suppuration was of such frequent occurrence. With antiseptic precautions this now so rarely occurs that French operators are returning to the Daviel extraction and with exceptional success; but the simple extraction, with which De Wecker's name has been prominently associated, retains the scleral section and thereby limits the danger and increases the probabilities of success.

* Read before the Homœo. Med. Soc. of the State of New York.

It is unnecessary to give a detailed description of the newer operation, as most of those interested in the subject are familiar with it, and others caring to know the technique may easily find much concerning it in our later literature. It will be conceded that while such eminent ophthalmologists as Knapp and Galezowski favor, and Hasket Derby and Alfred Graefe oppose, the simple extraction, it is still a moot question, and any testimony bearing on the method is timely.

In a paper in a late number of the JOURNAL OF OPHTHALMOLOGY, OTOLOGY, AND LARYNGOLOGY, Dr. Deady has gathered the experience of our operators throughout the country, and at the time that these views were written, last June, none had been making the simple extraction. Since July last, however, I have been employing it in all suitable cases, and the results have warranted me in considering the method a very definite advance on the old operation.

The chief advantages of the simple extraction I would summarize as follows:

First: The absence of any disfiguration. It is true that an upward iridectomy may not be obtrusively noticeable, especially if the irides are dark. But in those having light eyes, a distorted pupil may be a matter of much importance. In a case operated last summer in the Buffalo Homœopathic Hospital, the patient was a young and quite handsome woman, with light-blue eyes. One eye only was affected, so that no correcting lenses need be worn to conceal the result. The extraction was successfully made by the simple method. Unfortunately the patient struck her eye with her hand one night while asleep, causing a slight prolapse of the iris. Notwithstanding this, however, the eyes after recovery were so nearly alike that it required close observation to know which had been operated, the only difference being that the pupil of the one, though perfectly movable, was slightly oval instead of round.

Second: The absence of pain. While cocaine renders the cornea anæsthetic, the iris still remains exquisitely sensitive. It is no small matter to be able to assure a nervous

patient that the operation shall be absolutely free from pain.

In a case operated last spring, that of a friend and fellow-physician, the iris was touched, and an involuntary movement made a suitable incision impossible. A preliminary iridectomy was made, therefore, and the eye allowed to heal, after which an extraction was successfully accomplished.

Third: The cleanliness of the wound, and consequent more rapid healing. The importance of this point cannot, it seems to me, be too strongly emphasized. The raw edge of the iris and the exposed ciliary body which an iridectomy leaves, paves the way for the iritis, or irido-cyclitis, which occasionally follows. When the section has been sufficiently generous and no complications have arisen, I have never seen inflammatory conditions arise.

In one case, that of a strong, perfectly well woman, an emergency in her own family made it imperative that she should leave the hospital on the fourth day after the extraction, and she subsequently became an out-patient. There was, nevertheless, no symptom of irritation; healing was rapid and the result excellent.

Fourth: The better visual results.—A movable diaphragm, governed by light and accommodation, even through an artificial lens, will certainly give better visual results than a broad, irregular opening into the darkened eye-chamber. It must be remembered, however, in this connection, that other elements may so largely enter into the question of sight—as, for instance, modified corneal curvature and differences in clearness of the media—that statistics on this point are not entirely trustworthy.

The objections to the simple extraction may be briefly summed up as follows:

First: It is more difficult, and yet not enough more difficult to embarrass an operator of reasonable skill. The section must be more quickly made and be somewhat greater in extent, but I have in no case as yet had prolapse of vitreous.

Second: Prolapse of the iris may occur. When this dan-

ger is feared, eserine may be used as a safeguard. Should prolapse occur it is an embarrassing complication, and it is better that the protrusion be abscised.

Third: The single extraction is not always possible.—Two cases have occurred in my own practice within the last six months in which an iridectomy must be made before the lens could be delivered. In one of these the vitreous was almost entirely fluid. A considerable quantity had been lost before I realized that the thin water flowing out was not the aqueous humor. The scleral walls gave no support, and even after a section of the iris had been removed, the lens was delivered with great difficulty.

The other case was that of a well-preserved woman of seventy, who came from Bellefontaine, Ohio. The eye was slightly soft, but the perception of light and field of vision were good. Cocaine, 4 per cent., was used in a 1–5000 solution of bichloride of mercury. Through some delay it was nearly twenty minutes after the first instillation before the extraction was attempted. The section was made without accident, when immediately the anterior chamber filled with air. There was no resiliency in the scleral walls, and the lens could not be delivered. An iridectomy was made, when without any loss of vitreous the entire front of the eyeball collapsed. The capsule was opened and the lens delivered, and still the anterior chamber did not refill. At the end of five minutes the cornea was still crumpled and sunken, and the eye was dressed. Slight pain followed, but in three weeks perfect recovery had resulted with excellent reading vision. The utter relaxation appeared to have been due to too complete anæsthesia, too prolonged, and possibly exaggerated by the double chlorides.

The conclusion which my own experience warrants is that the operation must be determined by the conditions of the case. These cannot always be foretold; but, where applicable, the Simple Extraction is the safest, the best, indeed the *ideal* operation for cataract.

The second point which I wish to note in this paper is a manœuver which has greatly lessened the number of my

operations for secondary cataract; that is, *immediate division of the posterior capsule with the cystotome*, after the extraction of the lens. A secondary capsulotomy, while apparently a simple procedure, is by no means without danger to the eye. It is true that a fine cobweb-like membrane may usually be needled without any discomfort to the patient, and with no other inconvenience than that of a few days' additional detention. If, however, the membrane is dense, the endeavor to make a good opening may be followed by destructive inflammation, and, in not a few instances, a successful extraction has been ruined by subsequent capsulotomy.

The little operation that I have made (and which I am not aware that other operators are making) is, on the other hand, almost absolutely devoid of danger, and in obviating a secondary operation it adds to the personal comfort of both operator and patient.

With peripheric division of the capsule, secondary cataract occurs with great frequency. Knapp has been obliged to operate a second time in more than 50 per cent. of his cases. With the simple operation the necessity for subsequent needling is already much lessened. In 692 extractions with iridectomy, Coppez met with secondary cataract 120 times, and only ten times in 254 simple operations. In the reports aggregated by Dr. Deady, from 30 to 50 per cent. of the cases treated required secondary operation.

My own records previous to last July show about a like proportion. Since then, in no case in which a posterior capsulotomy has been made have further operative procedures been necessary. The technique is simple. If, after the lens is delivered, the pupil is not absolutely clear and black, the cystotome is again employed, and a free section of the posterior capsule made. The vitreous immediately enters the incision and keeps it patulous. Healing has never, by this procedure, been in any degree interrupted; and the anxiety and danger of a subsequent operation are almost entirely obviated.

The third point of which I wish to speak is the after-dressing.

A bandage, be it never so carefully applied, is often hot and uncomfortable, and is, moreover, liable to become misplaced. The simple isinglass plaster which Michel has so long used, and which Chisholm so warmly eulogizes, has served an excellent purpose. In a case upon which I operated several years ago, in the midst of the greatest squalor and filth, the plaster, antiseptically applied, remained for a week without being removed, and succeeded in keeping out the pathogenetic bacilli so completely that vision was perfectly regained. A bandage, under similar circumstances, permitted the loss of an eye.

Patients complain, however, that the plaster fails to give a sense of security to the wounded eye, and a more substantial dressing is required. I have, therefore, made a happy compromise. The lids are covered with a small piece of linen or cotton cloth, lightly spread with vaseline, the orbits filled with antiseptic absorbent cotton, a broad adhesive strap carried from temple to temple, and another from the brow to the cheek (the latter alone when but one eye is to be protected).

The simplicity of application, the ease with which it is removed, and the complete feeling of security which it gives the patient, make this the most satisfactory protective, not only after cataract extraction, but in general surgery of the eye, which I have ever employed.

NOTES ON GELSEMIUM.

BY W. A. PHILLIPS, M.D., CLEVELAND, O.

The influence exerted in certain instances upon the optic nerve by the excessive use of tobacco is so profound and long continued that it appears improbable from past experience that any known remedy will prove efficient in curing or perhaps in even permanently arresting the progress of this influence after it has become established as a recognizable disease. However, our efforts to afford relief should not relax because comparatively little has been accomplished in this unpromising field. The word of testimony I have to offer I trust will induce others to persevere in the use of Gelsemium, to test by a large experience its value in nerve and retinal affections. It is hardly necessary to refer the readers of this journal to the provings of this drug to establish the fact that it exerts a marked effect upon the deeper structures that have to do with the sense of vision. But extended clinical experience must always verify the proving of any drug before it can be safely relied upon as a curative remedy, and in this line I was especially impelled to a persistent use of Gelsemium, in observing two persons who were very susceptible to its toxic action. In either case, five drops of the tincture were sufficient to produce the characteristic symptoms of giddiness, headache and heaviness of the lids, followed by almost total loss of vision. In one case, the accommodation first failed, while in the other the sensibility to retinal impressions seemed to precede the loss of adjustment. In about forty minutes after the five drops were taken, the vision was reduced to $\frac{2}{200}$, could not be improved

by lenses, and would continue from five to fifteen minutes. Normal vision would return in from one-half to two hours. There was not sufficient change in the ophthalmoscopic appearance to indicate impaired vision. Whether the continued use of this drug, even in persons so susceptible to its toxic effects, would eventually produce permanent impairment or total loss of sight, in a manner similar to that produced by tobacco, can, of course, only be conjectured; but certainly the provings have a remarkable bearing upon both acute and chronic inflammations of the optic nerve and retina, and I am confident that the full value of this remedy is not appreciated. By way of illustrating its use, the following cases are given as worthy of note:

Case I.—Mr. ——, æt. fifty, had been accustomed to the use of tobacco since his youth, and during the last few years had smoked from five to fifteen strong cigars a day. He was also more or less addicted to the use of strong drink. Two years previous to the time I first saw him his sight had begun to fail, the first two or three months, the immediate cause being impairment and finally complete loss of his accommodation. Sight for distance remained very nearly perfect, for a month; after, it was necessary for him to wear plus five dioptrics for reading. So soon as his sight began to fail for distance he consulted an oculist, who prescribed iodide of potash, which was continued more or less constantly in from five to twenty-grain doses for six months. Smoking was reduced to two mild cigars daily during this time; but the sight gradually diminished and at the time of my examination in the right eye was reduced to $\frac{20}{70}$; in the left $\frac{20}{30}$. He was given two grains of Gels. 2d trit., four times a day. At the expiration of two weeks the sight had diminished in about the same degree that it had the few weeks previously, so nearly as could be estimated. The remedy was, however, continued, but given every two hours for two weeks longer. At this time the sight was no worse. The remedy continued, three times a day, and no diminution occurred for four months. At this time I suspect that the patient indulged freely in ardent spirits. At any rate, his general health gave way, the blindness increased again, and during the remaining six months of his life, it was a history of gradual failure.

While there is nothing brilliant about the result in this case, it illustrates clearly that iodide of potash was of no service whatever; and that Gelsemium did beyond doubt exert a marked influence in temporarily arresting the progress of the disease, and considering the gravity of the case it must be looked upon as affording at least strong presumptive evidence of the efficacy of Gels. in similar cases.

Case II.—Mr.——, æt. forty-two, by the excessive use of tobacco was punished for his foolishness by threatened loss of sight. My first examination was made one year ago. At that time the vision of the right eye was reduced to $\frac{20}{100}$, and with the ophthalmoscope a slight blanching of the optic disc could be detected as compared with the disc of the opposite eye. No other abnormal signs or symptoms could be discovered. The sight of the left eye was $\frac{20}{30}$, with no other sign or symptom to indicate disease. The patient agreed gradually to discontinue the use of tobacco, and in the course of a month to stop entirely, which was done. He did not use alcoholic drinks of any kind. He was given Gelsemium, gtt. iii, of the first dilution, four times a day for one month. During this time vision of the right eye had slightly diminished, he was uncertain about letters and figures which he had read correctly when the first examination was made. The only change that appeared in the other eye was expressed by the patient, who explained that the sight was "steamy." The same letters, however, could be read that were plain to him the month before. During this time the eyes had been used but very little for reading, and had been protected from bright light. Since that time the same remedy has been given four times a day every other week. At this time the vision of right eye is $\frac{20}{200}$; that of the left eye $\frac{20}{30}$.

The improvement of sight in the worst eye began about six months before the examination first made, and four months previously in the other. While the prospect for the right eye is not flattering, it is to be observed that the progress of the disease is not so rapid as it was previous to the use of the remedy, while in the other eye there is marked improvement. Discontinuance of the use of tobacco may of itself be sufficient to account for the improvement

in the left eye, but it seems safe to regard it as highly probable that the action of the remedy is aiding in the process of repair. This seems the more evident in view of the fact that at times a foggy state of the sight will occur, which will disappear much sooner if the remedy is taken than if it is not.

Case III.—Mr.——, æt. sixty, was attacked five weeks ago with idiopathic retinitis, which developed slowly in the left eye. Two weeks since, an examination showed a dull white exudation in the temporal side limiting the field of vision to a sort of kidney-shaped outline—central vision being $\frac{20}{70}$. A frontal headache, mostly in the side corresponding with the affected eye, was constant and the eye sensitive to light. Gels. was given, 3d trit., every two hours, and notwithstanding the patient refused to give up his literary work, the headache was relieved the second day; the sight has improved to $\frac{20}{30}$, and the exudation is disappearing.

I have a record of five other cases of retinitis, no one less serious than the above, and three much worse, all of which with one exception have done well under the action of the remedy.

I believe Gelsemium to be a remedy that should be given frequently in the treatment of any given case and in appreciable doses, not higher than the 3d trit.; for it is not a drug that is long-continued in its action, and hence frequency in its administration is required.

THERAPEUTICS OF SUPPURATIVE INFLAMMATION OF THE MIDDLE EAR.

BY WM. E. ROUNDS, M.D., NEW YORK CITY.

Several years ago I published an article on chronic suppuration of the middle ear, basing my treatment upon my experience as assistant aural surgeon of the New York Ophthalmic Hospital. My excuse for again appearing in print in connection with the same subject is, that I feel that I have added to my experience. I propose in this article to give what I consider verified therapeutics of chronic suppuration of the middle ear.

Alumen Usta.—Is a remedy useful when granulations have appeared in great abundance in the external canal and drum cavity. It is only useful when the granulations bleed easily when touched. Easily bleeding polypi often call for this remedy. The discharge is muco-purulent or clear semi-transparent mucus, which is very tenacious, and usually odorless. This is often associated with a hypertrophic nasal catarrh, with ulceration of the nasal passages. Frequent bleeding from the nose. Discharges of thick, tenacious mucus at times, but usually the patient suffers from "dry catarrh." Frequent desire to blow the nose, which causes bleeding from the nose. I have used this remedy in the 3d trituration, and have frequently supplemented its use internally by the local application of the same remedy in the 1st dec. trit., dusted upon the diseased tissues. I think it inadvisable to use a stronger preparation, as generally the middle ear is very intolerant to the presence of crude preparations of alum.

Arsenicum.—Burning, itching in the canal. Red, burning

pustules in the canal and upon the auricle where the discharge touches, which become painful ulcers. Chronic discharge associated with burning periodical pains in the ears. The pains are intolerable. Arsenic is indicated in patients suffering from general debility, pale waxy complexion, who are suffering from chronic malaria. The pains are relieved by warm applications. I usually use this remedy in the 1st or 2d dilution—sometimes in the 3d. I quite often alternate with it Ferrum phosph. 3x. In many cases these two remedies act much better together than separately, especially if there is pain and tenderness in the vicinity of the ear.

Aurum mur.—Will often be useful in old cases with a suspicious history. Chronic inflammation of the mastoid process, with *tearing, drawing pains worse at night.* Caries of the mastoid process, with an exceedingly offensive discharge from the ear. Pains at night relieved by keeping the head warm. An extremely offensive nasal catarrh is a usual concomitant; the nostrils being filled with plugs of offensive mucus. Scrofulous ozæna. The cases which call for Aurum are among the most desperate which we have. The remedy must be pushed persistently and all possible assistance given it by proper local treatment. If possible, all accumulated pus must be removed daily from the mastoid cells, and granulations removed and prevented from springing up to prevent the free discharge of pus. In many cases, especially when the mastoid process is extensively necrosed, it would probably be better to make an opening in the mastoid process to the air cells. This would make it easy to keep the ear free from pus and assist in getting rid of the necrosed bone.

Calc. carb.—The general condition of the patient will guide the homœopathic physician to this remedy. The discharge is usually profuse, not very offensive or corrosive. A profuse light yellow discharge from the ears in fat, flabby children, who perspire freely about the head and take cold from the least exposure to a draft of air. I think sensi-

tiveness to the air is the most characteristic symptom of this remedy. I prefer to use it in the 6x trituration.

Calc. iod.—Many of the symptoms are the same as those of the carbonate. The discharge is more excoriating, is thinner, and flows from the canal less freely, and there is of course a more disagreeable odor. If the glands in the vicinity of the ear are involved, the other symptoms are emphasized.

Calc. phos.—Is indicated, I think, in all cases of chronic suppuration of the drum in any way associated with phthisis. The patients are thin, poorly nourished, sometimes even notwithstanding they have a good appetite ; poor assimilation of food. The discharge is sometimes profuse, not offensive, often beginning without any symptoms of acute inflammation. In these cases the membrana tympani will usually be found to have been swept away entirely ; seemingly to have melted away like so much wax, taking with it the malleus.

It has also been useful to me in cases in which the discharge is sluggish, darker in color and offensive in odor, associated with vigorous granulations of drum and external canal. I often alternate this remedy with some other particularly indicated by the acute symptoms. For me it has seemed to stimulate the action of Ferrum phos., Hepar sulph., Rhus. tox., and Belladonna, when used with one or the other as the symptoms seemed to indicate. I am using the remedy now only in the 3x trit.

Capsicum, I think, can never be useful in a case of chronic suppuration pure and simple. But when the mastoid becomes involved in the course of the chronic disease and is the seat of *drawing*, *tearing* pains, especially if the mastoid process becomes swollen and red and extremely tender, then Capsicum in the 3d trit. will almost invariably check the acute process, if prompt measures are taken to release the stored-up pus.

Causticum can be used during the treatment of a chronic case for the purpose of relieving some disagreeable symptoms, shooting and tearing pains through the ears accom-

panied by a disagreeable stopped sensation in the ears. When speaking, the voice resounds in the affected ear. *Roaring sounds in the ears when speaking, as though his head were in a barrel.*

Chamomilla.—Often as a "thrown in" remedy in children who have taken cold while suffering from chronic suppuration of the drum. The mental symptoms will lead you to it. The auricle is usually red and hot.

China.—Useful in weak, debilitated women and children especially; those who have suffered from hæmorrhages from the ears or elsewhere; ringing in the ears; hæmorrhages from the ears. I usually precribe it in the 3x, and am very fond of alternating this remedy with Calc. phos. 3x. I am confident in nearly every case China may be assisted by Calc. phos.

Conium.—Acts well when there is a mixture of pus and cerumen in the canal. Hard, dark cerumen which forms in the canal and prevents the escape of pus. Tendency to the too rapid secretion of cerumen. The parotid and other glands become stony hard, and very tender.

Elaps.—In a few cases in which Elaps was useful, there was a greenish-yellow or watery discharge. Much itching in the ears. The condition which led me to give the remedy, however, was found in the nostrils, which were plugged with lumps of dried mucus. The nostrils filled with scabs of green, half-dried mucus. The patient sleeps with his mouth open, and frequently has nose-bleed from relieving the nostrils in the morning.

Graphites.—Is indicated when there is persistent cracking of the skin, and eczematous inflammation wherever the discharge comes in contact with the skin. Cracking of the skin behind the ears. I use the 12x internally, and use locally a salve made from the same remedy: Graphites gr. v.; vaseline ℥ j., well triturated together. Of late I have been using the 1x trit. locally. After cleansing the canal with absorbent cotton, I dust a little of the remedy over the inflamed surface in the canal, as well as upon the auricle and face. This remedy acts better as a local remedy when

it is indicated by the cracking of the skin and the soft, flabby condition of the flesh. I have not found it particularly useful as a general local remedy.

Hepar sulphur.—Extreme sensitiveness to contact is the keynote of this remedy. *Children cannot bear to have their ears examined.* Even adults shrink from having their ears examined. *Slight contact causes much pain.* Dread of contact which is out of proportion to the actual pain caused. The canal is filled with white, cheesy, or sometimes bloody pus, which irritates the skin with which it comes in contact. Hæmorrhage is produced by the slightest contact, and little pustules appear in the meatus and on the auricle where the pus has touched. *There is always a decided relief from warm applications and from keeping the head and affected ear warm.* The patient goes about with his head wrapped up in a flannel blanket, and gets his only sleep with a bag of hot salt held against his ear. In a number of cases of mastoid disease with the above symptoms, with great tenderness and redness of mastoid process, this remedy acted well after Capsicum had failed to relieve. With this remedy also I am in the habit of calling upon Belladonna or Ferrum phosph. for assistance. Sometimes Gelsemium acts well with Hepar s. when there is a dull occipital headache and slow full pulse, a very frequent condition in mastoid disease.

Iodine.—Apparently this remedy is not often indicated by itself. I have known it to be useful in children with pinched, dried-up, old-looking faces, with *tender glandular swelling in front of the tragus.* Discharge not very profuse, with indolent ulceration of the membrana tympani.

Kali bichr.—Is indicated when there is a discharge from the ear of thick, yellow, fœtid matter. Itching in the middle ear with stinging pains. Sharp sticking pains from the ear to the throat. Ulcers upon the membrana tympani, which are not painful, excepting the occasional sharp stitches. Indolent ulceration of drum cavity. Granulations of the tympanic cavity which throw off a tough ropy mucus, which is darker in color and more offensive than that of Alum. ust. This remedy acts well when applied locally.

Applied in saturated solution it will often destroy granulations rapidly. It, however, sometimes sets up a severe reactive inflammation of the canal. I have known it to develop a severe diffuse eczematous inflammation of the external canal and auricle. I use the remedy now more often locally in the form of a powder—either in the 2x trit. or the 1st x triturated thoroughly with equal parts of Boracic acid. I consider the latter preparation a happy inspiration.

The patients calling for this remedy usually suffer from naso-pharyngeal catarrh with ulceration of the nasal passages, and a discharge from the nose of thick, ropy, offensive mucus, often tinged with blood. The 3x is usually given internally.

Kali jod.—Has an irritating, offensive discharge from the ear, with boring, tearing pains in the temporal bone. Dull, tense, numb feeling in the temporal bone, especially in the region of the mastoid process during the day, which becomes an intolerable aching during the night. Sudden shocks of pain were experienced in a case of caries of the mastoid. It was of great benefit in a case of mastoid disease, in which the mastoid process had become so diseased as to cut like a wet sponge.

Kali mur.—Is one of our best remedies in hypertrophic suppurative inflammation of the middle ear. The granulations in the canal are often abundant, or the middle ear is filled with hypertrophied mucous membrane. Is a good remedy for the increasing deafness which often keeps pace with the gradual stopping of a long-standing suppuration. Is very much like Baryta mur., but the glands seem to be less involved.

Merc. sol.—In chronic cases that have taken cold and are suffering from earache. The meatus is red—the pus thin, excoriating, offensive, and often bloody. The floor of the canal has often an irritated look, as though it had been picked up with a sharp instrument. The tympanum becomes filled with stagnant pus. The pus does not flow freely from the ear. Pulsation of the pus in the middle ear. Pain deep in the ear with pulsation of the pus at the too

small opening in the drum-head. This pulsation at the inner extremity of the canal is a positive indication for Mercurius. Pulsative roaring in the middle ear. The pains are dull and constant, but always get worse as night comes on and are better in the morning after rising. The patient looks haggard and pale, and suffers from free perspiration with the least exertion, which gives him no relief. With this remedy also I frequently give Ferrum phos. It not only more quickly relieves the pain, but seems to act as a much-needed tonic, while it does not seem to interfere with the action of the more important remedy, but rather increases it. Belladonna is another remedy I often give with Mercurius. When the throbbing in the ear is very great and painful, especially when the throat is red and dry and throbbing painfully, Belladonna and Mercurius make a good team, and will always pull together. *Exacerbation of a chronic suppuration from wetting the hair.* With Mercurius the fauces are bright red, the tongue large and flabby and indented by the teeth. *Ulceration of the membrana tympani, which bleeds at the slightest touch.*

Psoricum is a perfect godsend when we have an exceedingly offensive case to attend to. In many cases a dose of the 200th, night and morning for a week, will remove the disgusting appearance and odor in a wonderful manner. It is often useful in children suffering from chronic suppuration of the drum, who have become debilitated by some protracted disease. Peevish, unhealthy-looking children who have a disagreeable odor about them aside from that due to ear discharge.

Rhus tox.—Has been of use to me in a few cases in which the discharge has produced a red herpetic eruption where it has come in contact with the skin. Erysipelatous inflammation in the region of the ear, in connection with chronic suppuration and mastoid disease.

Silicea.—Will be useful in cases of long-standing, in which there is caries of the temporal bone, with an ichorous, offensive discharge. Itching of the middle ear, and of the deeper portion of the external canal. Children dig at their ears

with their fingers while asleep, causing a discharge of blood and pus. Ulceration of the middle ear, with itching and sharp stinging pains, relieved by scratching or irritating the ear. Patients enjoy having the ear cleansed with the cotton probe. This is particularly noticeable in children who usually object to having the ears cleansed.

Sulphur.—Is not so often indicated in this disease as I expected when I first began to prescribe for diseases of the ear. But for dirty, scrawny patients, especially children whose very hands and faces proclaim their aversion to the touch of water, and from whose ears is flowing a dirty-looking, offensive, sometimes sour-smelling pus, Sulphur will produce a very desirable change. There is usually a great deal of itching in the ears, but any attempt to relieve it by scratching causes pain immediately. Silicea or Calc. phos. are quite often efficient successors to Sulphur. I use the latter in these cases in the 12x trit.

Tellurium.—May be used with great satisfaction when the discharge from the ears is thin and watery and very excoriating, with an intensely offensive odor—compared by some to the odor of stale fish brine. The skin with which the discharge comes in contact looks as though it had been scalded, so very excoriating is the discharge.

THREE CASES OF HÆMORRHAGE FOLLOWING ENUCLEATION OF THE EYE.

BY CHAS. H. HELFRICH, M.D., NEW YORK CITY.

Serious hæmorrhage following enucleation of an eye is so rare an occurrence that the report of these three cases which have occurred at the New York Ophthalmic Hospital will be of interest. Two of them were reported in the *American Homœopath* for January, 1884, by Dr. George S. Norton, and are republished now in order to bring them more prominently before the notice of the specialist; the other occurred recently in the clinic of Dr. W. E. Rounds.

It is nothing unusual to have a smart hæmorrhage immediately after the removal of an eye, but we have always been able to stop it at once by applying a firm compress bandage. In the future, however, I shall make it my practice to see that the hæmorrhage is thoroughly stopped and all clots removed before applying the bandage, because the great difficulty in controlling it afterward is, that the blood having accumulated in the orbit not only infiltrates all the tissues but pushes the conjunctiva forward in such a manner that it is extremely difficult to get at the seat of the trouble. For this reason I found it impossible to remove all the clots in Dr. Rounds' case, and judging from the description of Dr. Norton's he had the same difficulty. It seriously retards the recovery also, and may even give rise to cellulitis.

I have in mind now a case of Dr. Boynton's in which this precaution was taken and I am positive that much trouble was averted.

The patient was a lady about sixty years of age who had been operated upon for hæmorrhagic glaucoma. The hæmorrhage following the enucleation was excessive for about twenty minutes, but was finally controlled by firm pressure. The orbit was then cleansed and packed with "spunk," and her recovery was perfect and rapid.

With reference to the causation of these hæmorrhages, it is of interest to notice that in three of the four cases cited some peculiar condition of the blood-vessels, fatty degeneration most probably, was present. Two of them had hæmorrhagic glaucoma, and the third had a hæmorrhagic diathesis. Thus it would seem that the possibility of such a complication should be borne in mind when cases having this disposition are operated upon. That it does not always occur was pleasantly brought to my mind when, fresh upon the experience with Case No. 1, I enucleated an eye for hæmorrhagic glaucoma and met with only the usual amount of bleeding.

An analysis of the treatment in these cases brings to view the importance of elevating the head, the employment of pressure, packing the orbit with "spunk," and the injection of hot water. Internally Ergot and Persulphate of Iron were found most serviceable.

John P., æt. forty-eight, applied for treatment at Dr. Rounds' clinic on Oct. 14, 1889. He gave a history of having suddenly lost the sight in his right eye the previous June, at which time he consulted an oculist, who informed him that it was due to an intraocular hæmorrhage. The subsequent history was a succession of hæmorrhages at irregular intervals, each one being followed by partial absorption. On the day of his admission the vision was reduced to shadows, the iris was adherent to the lens, the vitreous was fluid and contained numerous opacities, and the tension plus one. An ophthalmoscopic examination revealed the presence of retinitis albuminurica, which was further verified by an examination of the urine.

Further inquiry directed to his previous history elicited the fact that he had been suffering from nephritis for a year and a half. A solution of Eserine 1 to 200 was instilled locally every three hours, and Gels. 1 given internally.

The treatment seemed to benefit him temporarily, but succeeding hæmorrhages increased the tension and made an operation imperative. Accordingly an iridectomy was made on Oct. 29, which reduced the tension at first, but was followed at the end of two days by another hæmorrhage and a reappearance of the pain and increased tension.

On Nov. 4, another iridectomy was made. From this date to Dec. 13 the eye improved and retrograded alternately, depending on the presence of hæmorrhages. His general health, however, was failing gradually, and it was thought best to discharge him from the hospital and place him under Dr. Dillow's care for special treatment of the kidney trouble. He was readmitted to the hospital on Feb. 5, greatly improved.

It was now decided to enucleate the eye, the operation being performed that afternoon. Chloroform was the main anæsthetic used, but as he did not respond very well to its action a little ether was employed toward the end. The operation was followed by more than the usual amount of hæmorrhage, so a compress bandage was applied very tightly and the patient put to bed.

An hour later the nurse reported that the blood had penetrated the lint and bandage and was staining the pillow. On removing the bandage the lids were found very much distended by the effusion of blood in the orbital cellular tissue, while between their margins the blood was flowing quite freely. An endeavor was made to turn out the clots, but it could only be partially done, as the collection of blood in the orbit had pushed forward the conjunctiva so that it acted like a valve. When the finger was introduced into the opening left by the removal of the globe a large stream of blood was forcibly ejected. Various measures were adopted in the endeavor to stop the hæmorrhage, the head was elevated and a triangular piece of ice pressed into the orbit; next hot water combined with pressure, and then injections of tannic acid. The blood seemed noncoagulable and these measures failed. An effort was made to pack the orbit with "spunk," which was done as thoroughly as the circumstances would permit, and was followed by a decrease in the amount of hæmorrhage.

The patient during this time grew weak, his extremities became cold, and a cold perspiration covered the body, so that it was necessary to use stimulants. At about eight o'clock Dr. Rounds arrived. The head was raised still higher and very hot water

injected into the orbit with a large aural syringe, while internally a teaspoonful of Ergot was administered. The bleeding now ceased entirely. A little styptic cotton was applied about the lids and an icebag placed beside the eye. The patient fell asleep and seemed to be dozing well until about twelve o'clock, when in the act of vomiting he was taken with an uræmic convulsion. This attack lasted about fifteen minutes and was followed by another at one o'clock.

The orbit was washed carefully with a bichloride solution the next morning, without any return of the bleeding. During the succeeding days the effused blood in the orbital tissues gradually became absorbed, diminishing the distension of the lids, but the swollen conjunctiva protruded between their free surfaces. After various astringents had been used unsuccessfully this swelling was speedily reduced by an application of equal parts of boracic acid and iodoform. His general health improved gradually, and he was discharged March 5.

The following are Dr. Norton's two cases, as reported by him in the *American Homœopath* for January, 1884:

Case I.—March 4, 1882, Tobias J——, a Jew, 57 years of age, came to my clinic at the New York Ophthalmic Hospital. Two weeks previously, he had received an injury to the right eye which had produced total loss of vision, and caused, ever since, considerable pain. Upon examination the eyeball was found intact The anterior chamber was filled with blood (hypæmia) so that the iris and deeper structures could not be seen. There was considerable chemosis and ciliary injection, while he complained of much tearing pain in the eye and head, especially at night, thus indicating inflammation of the iris and probably of the ciliary body, as this region seemed somewhat sensitive to touch. He was taken into the hospital, put to bed, atropine instilled, ice applied, and Aconite, iii., given internally.

March 7.—Has steadily improved, less chemosis and very little pain. Discontinued ice. Rhus tox. i.

March 8.—More pain was complained of after leaving off the ice. No particular change can be observed in the amount of blood in anterior chamber. Arnica iii.

March 27.—From the last date to this, the condition of the eye has varied little, some days seeming better, other days worse.

The chemosis has almost disappeared, though the eye still remains very red, with some pain. No change in the hypæmia is observed. Various remedies have been prescribed without avail.

About this time, on account of dissatisfaction with the food, which could not be prepared in accordance with the laws of the Jews, he left the hospital.

May 29.—The patient now returns for further treatment. The eyeball is atrophied, though it still remains inflamed and painful. Enucleation is recommended and consented to. Ether was thereupon administered and the eyeball removed. No complication attended the operation, and no more hæmorrhage resulted than usual after an enucleation. A firm compress bandage was applied and the patient put to bed. This was about 4 P.M.

May 30.—About nine o'clock last evening the nurse was called, as the patient complained of the bandage being too tight. Upon its removal the orbital cellular tissue was found much swollen by the infiltration of blood, which was oozing from between the lids. The bandage was reapplied, but the trouble still continuing, at ten o'clock the house surgeon, Dr. Deady, was called. The lids were then enormously distended and blood was slowly oozing from between them. Much pain in the head was complained of. Questioning elicited the fact that three or four years previously a cut of the finger had bled from two to three months notwithstanding all the exertions of his physicians, thus indicating an hæmorrhagic diathesis. Iced cloths were now used and Phosphor. iii., given internally. This morning the hæmorrhage was much less but had not stopped. The patient was pale and cold, though he felt hot and would have no covers over him. The pulse was weak. Secale corn. iii., was administered, but was this afternoon changed to Ipecac iii., on account of the bright red color of the blood, and some nausea.

May 31.—Has passed a very comfortable night with only occasional slight oozing of blood. As he was very pale and weak this morning, milk punch and beef tea were given, with as much food as he could take. The pulse is therefore a little stronger this afternoon, and color of patient is better.

June 1.—The hæmorrhage was worse this morning ; pulse became very weak ; color was bad. Five-drop doses of the tincture of Persulphate of Iron was prescribed every hour. Under this

remedy all the symptoms seemed to improve, so that the iron was given at longer intervals.

June 2.—Much better to-day; only a very little bleeding this morning and also this afternoon on removing bandage.

June 3.—About 6 A.M. began to bleed and lost considerable blood, though it was soon controlled by applying dry lint and repeating more frequently the Ferr. persulph.

June 5.—Patient has been doing very well since the last date until about six this morning, when the eye began to bleed quite profusely, running in a stream down the cheek. As the use of lint with moderate pressure did not relieve, a tight compress bandage was applied. In an hour or two the hæmorrhage gradually ceased. The iron has been continued when necessary, and to day has been alternated with China.

June 6.—Again this morning at six had another profuse hæmorrhage which was controlled by styptic cotton and the compress bandage. The patient has had his strength kept up as much as possible, but, notwithstanding, is very weak. The swelling of the cellular tissue of the orbit is immense, protruding between the distended lids, so that the whole appears about the size of a hen's egg. Phosphor. i., was given to-day.

June 7.—Another attack of profuse bleeding this morning. Again checked by employing the styptic cotton and tight bandage. There is a little oozing this afternoon, but the pulse is good and his general condition fair.

June 8.—About eleven o'clock last night he began to bleed so profusely that within five minutes not only the compress bandage had become saturated, but also the pillow upon which he lay. More or less severe hæmorrhage continued all night, necessitating the constant attention of the house surgeon. During this time a great variety of hæmostatics were employed, but with no avail. Besides the use of ice, pressure, and styptic cotton, injections of ice-water, hot water and a saturated solution of perchloride of iron were made to the bottom of the orbit, while at the same time Gallic acid, Ergot, or Ferrum persulph. was administered internally. Toward morning the application of the ashes of brown paper and again of flour seemed to be followed with some temporary benefit. Notwithstanding all these measures, however, the hæmorrhage could not be controlled. The patient is all the time growing weaker and now appears almost exsanguinated. He is kept up

by stimulants and as nourishing a diet as possible. About seven this evening, as the oozing of blood, more or less profuse, still continued, the orbit was cleansed of clots as thoroughly as could be done, and the cavity syringed with water. Afterward a small piece of "spunk" was packed snugly into the orbit and the whole covered with a compress of the same material held in its place by a tight bandage. At 11 P. M. note was made that the bleeding had been at once stopped and had not then reappeared, though the patient complained of severe headache, relieved by cold applications; he also suffered from much nausea. An ice bag was applied to the head, and China alternated with Ipecac iii. every hour.

June 9.—No hæmorrhage. Removed the outer covering of "spunk," but did not disturb that packed in the orbit. Dressed with calendula.

June 10.—About 10 A.M. slight oozing of blood was observed. The "spunk" was again applied, when it at once ceased. The swelling of the orbital cellular tissue is still immense and very hard. China 3 and Rhus 1.

June 12.—There has been no hæmorrhage since the last date, with the exception of a slight discoloring of the discharges. Yesterday the discharges becoming offensive, the "spunk" was removed from the orbit and Platt's chlorides (1 to 4) used. The odor is therefore much diminished to-day. The swelling is still hard and excessive in amount. Ordered the swollen lids and protruding cellular tissue of the orbit brushed every hour with a 4 per cent. solution of salicylic acid in glycerine, and gave Phytolacca.

June 19.—Has been improving rapidly. The swelling is not more than one-half its original size and is very soft. The discharge is still considerable. Phytolacca (gtt x : ℥ j) was now prescribed locally while it was continued internally.

June 26.—Only moderate swelling at this time and discharge greatly diminished.

July 8.—Discharged cured.

Case II.—Mrs. M., æt. sixty-five, was sent to me May 3, 1879, for advice. The history of her trouble was as follows: Twenty-five years ago she had noticed a small black spot on the "white of the right eye" near the outer border of the cornea. It remained stationary until five or six years ago, when it began slowly

to grow, and within the past six months has increased in size quite rapidly and become inflamed. Examination shows now a growth, black in color at the center, shading off to a grayish brown at periphery, elevated about 1 mm. above the surface of the cornea and extending from the corneo-scleral junction, outer side, over nearly one-half of the pupil. The conjunctiva is slightly injected. The tumor is slightly vascular and supplied by two very large superficial conjunctival vessels. R. V. $\frac{10}{200}$. The left eye appears normal with the exception of a small macula on cornea and striated opacities in the lens. L. V. $\frac{20}{100}$. The diagnosis of "melanoma corneæ" is made. As her general health is good and the tumor seems to be local, confined to the cornea, internal medication is recommended while the case is watched.

March 16, 1881.—A careful examination has been made at frequent intervals during the past two years. After four months treatment under Caust. or Thuja the test of the vision was: R. V. $\frac{20}{100}$, L. V. $\frac{20}{50}$. No decided change was, however, to be observed in the tumor. In January, 1880, the growth seemed to be again extending, so that by May of this year it had covered three-fourths of the pupil and R. V. $\frac{12}{200}$. From this time to present date it has appeared sometimes better and sometimes worse, but upon the whole there has been a gradual extension of the disease, though it is still confined to the cornea, involving nearly four-fifths of its surface. Various remedies have been employed at different times, as Sepia, Sil., Aurum, Hydrocotyle, Lapis alb., Kali mur., Calc. phos., etc. Enucleation of the eye is now advised.

April 18, 1881.—This afternoon about three o'clock ether was administered, and the eyeball removed. No more than the customary amount of hæmorrhage followed the operation. A firm compress bandage was applied and the patient put to bed. Two hours later, the patient complaining of some pain, the bandage was examined and found saturated with blood. It was at once removed, when the blood began to run in streams down the cheek. The lids and orbital cellular tissue were infiltrated and swollen. From this time until about eleven o'clock, a period of five or six hours, the hæmorrhage continued more or less profuse. She was a large, plethoric woman, but in a short time the pulse became weak and intermittent. Stimulants in small amount soon increased the strength of pulse. Various internal remedies were administered, while locally pressure bandage, pressure by means

of finger in orbit, ice, styptic cotton, and hot water injections were all employed with no permanent benefit by Dr. Deady and myself. About eleven P.M. Dr. Liebold saw the case with me in consultation, but by this time the hæmorrhage had been nearly controlled under the use of ice-water injections. At his suggestion, however, Persulphate of Iron was prescribed in five-drop doses.

There was no hæmorrhage after this date, and the patient made a good recovery. No complications were observed, with the exception of a moderately profuse discharge from the orbit and a small abscess in the cellular tissue of the lid, which disappeared in about ten days.

Examination of the tumor confirmed the diagnosis of "melanoma corneæ."

Remarks.—Immediately after the removal of an eye a certain amount of bleeding naturally follows the division of the vessels, but this is almost invariably small in quantity and is at once controlled by firm pressure or the application of cold water. Secondary hæmorrhage is an extremely rare complication. From a fairly thorough examination of the literature pertaining to diseases of the eye, not a single case has been found of secondary hæmorrhage after enucleation of the eye which can be compared in severity to Case I., and only a very few in which the hæmorrhage has been equal to that in Case II. The cause of the extensive and continuous hæmorrhage in the first case is without doubt to be assigned to the hæmorrhagic diathesis, as was evidenced by the history of a previous wound in which the bleeding could not be controlled for two or three months, and also by the non-absorption of the blood in the anterior chamber when he first came under our care.

In the treatment of Case I. it will be observed that all the most commonly recommended measures for controlling hæmorrhage were employed without avail. After the failure of all these, the use of the "spunk" was followed by immediate and permanent cessation of all bleeding. "Spunk" is one of the species of Agaric (*Boletus igniarius*). It is a fungus growth found upon the oak, and is prepared by removing the outer rind and cutting the inner part into thin slices which are then beaten with a hammer until they become soft and pliable. It was formerly highly commended as a hæmostatic, but is now rarely employed except in

controlling obstinate hæmorrhages from leech bites. In the case above reported it is true that we cannot say whether the bleeding was stopped by the application of the agaric or had ceased on account of the exsanguinated condition of the patient. Taking all the circumstances into consideration, however, we are inclined to believe that some benefit was derived by the application of the "spunk"; at least we would bear it in mind in a similar case.

Case II. was of interest both on account of the primary disease (melanoma corneæ) and the complication after removal of the eye. The tumor presented all the characteristic appearances of melanoma as described by Saemisch and other writers. There has been no return of the disease within the past two years, and the patient is apparently in good health. The cause of the after hæmorrhage in this case is by no means evident. There were no indications of hæmatophilia, and that the nature of the disease could have had any influence in this direction does not seem reasonable. In the treatment it will be noticed that most benefit was derived from injections of ice water deep into the orbit, and the internal administration of Persulphate of Iron.

ON THE TREATMENT OF STENOSIS OF THE NASAL DUCT BY THE INTERMITTENT NOCTURNAL USE OF REMOVABLE STYLES.

BY SAYER HASBROUCK, M.D., PROVIDENCE, R. I.

Some three years ago my friend, Dr. Arthur H. Benson, of St. Mark's Hospital, Dublin, Ireland, advocated the use of removable styles (that is, removable by the patient) in the treatment of obstinate cases of stenosis of the nasal duct. Since that time I have used this method wherever opportunity offered, and I feel confident that it will give much better satisfaction to the oculist and patient than the method usually in vogue.

Dr. Benson has so clearly described his method and the class of cases to which it is applicable, that I take the liberty of appending his article from the *British Medical Journal* of November 28, 1887, which is as follows:

Stenosis of the nasal duct, occurring as it does from so many and various causes, cannot be rationally or successfully treated by any single method. Each case must be separately considered, and that method adopted which, for that particular case, seems most suitable.

I have no intention of entering at large on a consideration of the various causes of stenosis, nor yet of considering all the methods of treatment that from time to time have been practiced or recommended, but shall confine myself to a method which has, in my hands, proved of great service in a certain number of cases, and which is, I think, capable of considerable extension.

All who have much experience of lachrymal obstruction must have now and then come across cases where the ordi-

nary methods of treatment failed to procure a permanent passage through the nasal duct. As long as the patient was under treatment, and could have the probe passed once a week, or even once a fortnight, all went well; but when he went home to the country (for it is in the case of those living at a distance from town that the greatest difficulties arise) the old trouble returned, and three or four months later, the patient whom you marked off as cured reappears with the tears still flowing over his cheek, with the same trouble present in every particular, for which he sought relief at your hands only a few months before. You have then to cut and probe as before, and commence again the tedious and painful treatment, your patient having less confidence, and you less assurance of success.

After some weeks or months of this treatment your patient again goes home, soon to experience afresh the old trouble, for the treatment of which he will probably then seek relief elsewhere. Few patients will return the third time to undergo a painful course of treatment which has failed to give adequate relief.

In a certain number of cases, passing probes (after division of the canaliculus) for a few days or weeks gives permanent relief, and nothing further is necessary; but in a large majority of cases, especially where there is old standing fibrous thickening of the lining of the duct, or where there is bone disease (caries) in the immediate region of the sac and duct, the treatment has to be continued for months, or even years, before a really permanent channel has been provided for the tears. It is in such cases that disappointment and discontent affect equally the surgeon and his patient, and it is for these cases that I have sought a remedy in what I have called "removable styles"—removable, I mean, by the patient himself.

At the Brighton meeting of this Association last year I ventured to suggest the plan of teaching the patient to introduce and remove his style himself; I had then only tried it in a very few cases. The Section greeted my suggestion with but slight favor, and thought it a dangerous

innovation to allow a patient to have anything to do with the treatment of his own case.

Since last year I have taught a considerable number of patients, both private and hospital, to manipulate their styles with ease, and have had the great pleasure of seeing some most obstinate and, I may say, almost incurable cases under the old method continue ever since free from trouble, the patient wearing the style at night and removing it again each morning.

The method which I adopt is to slit the canaliculus, either upper or lower, with Weber's knife, and pass probes in the ordinary way for some days or weeks or months as required. If the case is one of extensive narrowing, or if there is much bone disease, I often leave in a leaden style for some days, removing it now and then for the purpose of syringing and cleaning. As soon as the tenderness resulting from the first operation has subsided, I get the patient to remove the style himself, and when he has gained some confidence in doing this he can readily be induced to attempt the introduction of it. If he is, in the first case, shown before a looking-glass the way you put it in, he will soon get into the way of doing it himself. It is advisable at first to remove the style only for a few hours, and gradually increase the time till it can be kept out all day. When well in practice a patient can introduce and remove his style without the aid of a looking-glass at all. As soon as he is able to do this for himself I allow him to go home to whatever part of the world he came from, fully assured that so long as he can introduce the style each night he will have no return of the obstruction. My directions then are to introduce the style each evening on going to bed, and to remove it in the morning when dressing, before putting in his artificial eye and false teeth, and he finds no greater difficulty in doing one than the other. If at any time he does experience difficulty, or fails to introduce the style, it is time for him to come up again to have it examined into; but so far my experience has only afforded a single case where the patient, once skilled in the use of the style,

failed to get it in at home, and I am therefore convinced that there is no real difficulty in the operation after the initial timidity of the patient has been overcome. As well might a dentist require his patients to come to him to have their false teeth put in, or an oculist require his cases of enucleation to attend each morning and evening to have their artificial adornments adjusted, as a style-wearer be required to dance perpetual attendance on us to have his tear passage styled each day.

As the style is only required to be worn at night it is not necessary to risk anything for appearance, hence it may be left long, and bent with a good curve over the lid, so that there is no fear whatever of the style getting lost in the sac, an accident of not infrequent occurrence where a short style is used with a large sac.

Lead is the material of which I make the styles; common lead wire of different sizes, which can readily be cut to length, molded to shape, and smoothed off in any desired way to suit each case.

When the style has thus been used nightly for some months, according to circumstances, it may be worn at longer intervals, every second night, once a week, once a month, until finally abandoned, to be again resumed should the slightest evidence of narrowing of the passage appear.

Dr. Benson reports some six cases, which in brief are:

Case I.—A young lady of twenty, who had been under treatment for some years for stenosis of both ducts. Dr. B. tried the usual methods three different times, each time extending over some weeks' constant attention, but at the end of a year she was no better. She was taught the use of the removable style, and one year later was perfectly comfortable.

Case II.—Of much longer standing and more persistent treatment; at times lead styles had been left in the duct for a week at a time, but in the end he was no better. After nine months' use of the removable style he was delighted with his condition.

Case III.—Of four years' standing; after most persistent treatment with probes, astringents, etc., he was no better, but since using the removable style he has got along comfortably.

CASES IV. and VI. were cases of diseased bone, but after use of the removable style they found themselves in the happy condition of being able to take care of themselves.

It is my custom to open the superior canaliculus in the majority of cases, as it seems to me to occasion less maltreatment and to leave nature in a better condition to perform her functions. At the time of opening the canaliculus and passing the probe for the first time, it has been my habit to use chloroform after the method of Dr. D. B. St. J. Roosa, which is to moisten a bunch of absorbent cotton with it and let the patient inhale it up the nostril on the side of the intended operation, using cocaine locally in the eye at the same time. As Dr. Roosa said, it is not for general anæsthesia, as you do not give enough, but there is certainly sufficient anasthesia, either local or general, to make the operation such that the patient does not dread the future sight of the probe.

I make my style from lead wire, as does Dr. B., bending over at the top, making it cane-shape, which makes a handle for the patient to remove it by. Its size I leave a little smaller than the last probe used, so that at first the patient has little difficulty in inserting it. At first I find that the patient succeeds much better if allowed to use a few drops of cocaine just previous to making the attempt, but in a short time the majority of cases dispense with this. I have been able to follow up and note the condition of nine cases which have been successful, though I have used it in others, but as they have not reported to me I am not able to state the result; still I feel confident that they, too, would report a like happy condition. Of my nine cases I will report but three, as they illustrate the character of the cases sufficiently.

CASE I.—Mrs. A——, age forty-two. For fifteen years has had trouble with stenosis of the left nasal duct, and at two different times it has been opened and probes passed for long periods of time, but each time the oculist gave it up as hopeless. Some four or five years ago I first saw her, and found the canaliculus had grown together as well; so that I was compelled to make a new

opening into the sac, and it was only by using a good deal of force that I was able to get into the nasal cavity. She was persistent, and for two or three years came to me every week or so, insisting that it must be kept open, but at the best it was only a makeshift. At one time I used electrolysis. This was a little better, but not at all satisfactory, and it had to be repeated until finally we went back to probes again. My friend, Dr. Benson, wrote me of his experiments, and I at once applied them to this case, and since that time she has been able to look out for herself, though occasionally she returns and says that it don't seem to go in as easily as usual, and I pass a probe just a little larger and she goes away taking care of herself. This surely is much better than her former condition.

Case II.—Mrs. W——, age twenty-eight. Both nasal ducts had been closed for five or six years, and at times abscesses had formed. When I first saw her there were fistulous openings into both sacs, and, as you know full well, the general appearance of such a patient is anything but prepossessing if they care anything for personal appearance. She had been operated on before, but the result was not satisfactory. I passed probes through both ducts, and as it was necessary for her to return to her home the same day, I instructed her and her husband, who was with her, how to pass the style. After a few weeks I saw her again. The duct was open, and the fistulous openings had closed. At my first visit she was a sight to behold, but at present, some two years afterward, she has a pleasing appearance, with hardly a scar.

Case III.—Mr. N——, age fifty-five. Stenosis of the right duct of many years' standing, and no end of treatment by many different men, and, as he said, he had given up treatment years ago, but on account of an abscess of the sac he came to have it opened to relieve the pain. I explained to him the method of using removable styles, and he at once desired to make the attempt, which has resulted most satisfactorily to him; and after some eighteen months of taking care of himself, he said to me the other day: "If I had only known this some twenty years ago, I might have continued at my business and been worth a little money; but as it was, my eyes would blur up so, and the tears would drop on my work, and I had to give it up entirely and do what I could."

In the last two cases, I at first used Silicea internally, on account of the diseased condition of the bone and the

recent abscesses, to promote healing. Locally I used a slight astringent lotion. It is my usual custom to order a lotion of acid boracic, etc., to be dropped in the eyes after removing the styles, to allay any tendency toward irritation. I have never yet seen any harm result from the use of the styles, and I fear none.

This method is especially useful in cases from out of town, where it would be impossible for them to return frequently. At the first glance, one would say it is taking a good many chronic cases out of your hands and letting them take care of themselves; but as they generally take themselves off sooner or later, disgusted with your lack of success, it seems to me it is better to have them depart contented, willing to return when necessary, and at all times speaking a good word for your methods and success, which in the long run will accrue to your benefit.

TINNITUS AURIUM, OF LONG STANDING, RELIEVED BY OPERATIONS UPON THE NOSE.

BY W. E. GREEN, M.D., LITTLE ROCK, ARK.

Mr. G——, æt. forty-five, consulted me on account of tinnitus aurium, that had existed for more than ten years. The sounds were of low pitch, blowing and hissing in character, and had gradually grown in intensity until the patient was robbed of sleep, depressed in health and spirits, and almost driven to suicide. He had been prescribed for by many aurists, and had been told that the trouble was of nervous origin and not amenable to treatment.

Hydrobromic acid had given him some relief; but the drug produced such unpleasant systemic disturbances, that he was compelled to discontinue its use. He experienced the greatest benefit from China m., a remedy that my brother, Dr. F. P. Green, prescribed for him more than five years ago. He was in the habit of coming to my office every few months to get a new supply of the medicine. On one of his visits he complained so bitterly of his trouble, that I requested to be allowed to make an examination of his case; which I did with the following results: H. D. L.$=\frac{0}{48}$. H. D. R.$=\frac{1}{48}$.

He could hear the voice, in conversation, when slightly elevated. The auditory canals were very small, but healthy; membranæ tympani normal in appearance; eustachian tubes patent and easily inflated; nose large and prominent; hypertrophy of soft tissue over left inferior turbinated bone; nasal septum thickened and deflected to the right side, causing almost complete stenosis; a large teat-like prominence of erectile tissue on posterior extremity of both turbinated bones; pharyngeal sub-mucous tissue atrophied.

I attributed his trouble to the hypertrophic changes that had taken place in the nasal cavities, and promised relief from surgical treatment. He readily consented, and I proceeded to operate as follows: After spraying the nose and pharynx with a 4 per cent. solution of cocaine, I drew the soft palate forward by

means of two pieces of small rubber tubing, which were passed back through either nostril, brought out at the mouth, made taut, and tied over the upper lip. This afforded a good view of the parts and gave plenty of room for operative procedures. With a long cautery electrode, made by myself, bent forward upon itself one and one-fourth inches, manipulated through the posterior nares by the aid of a rhinoscopic mirror, I burned deep gashes into the thickened tissue on the posterior surfaces of the turbinated bones sufficient to cause its destruction. The parts were kept cleansed by the daily use of antiseptic washes applied with the post-nasal syringe, until healed.

Three weeks later with a burr, propelled by an electric motor, I cut away all the adventitious tissue in the anterior passage, paring and smoothing down the septum until it was thin, flexible, and easily pressed into position. The tip of the cartilage turned out at almost a right angle; this I cut away with a knife. I then found that I had a regular, capacious and patulous passage throughout.

While cutting away the bony tissue far back on the septum, an artery of considerable size was severed, that bled freely during the operation, causing the loss of several ounces of blood. I placed a pledget of styptic cotton over the mouth of the spurting vessel and tamponed the passage with antiseptic lint. This was left in position for forty-eight hours, when it was carefully removed; no further bleeding followed.

In addition to the antiseptic wash, I directed that the following ointment be applied twice daily:

℞.	Carbolic acid	gr. ij.
	Tr. calendula	gtt. xx.
	Lanolin	ʒ vij.
	Almond oil	ʒ j.

M. Ft. ungt.

But little suffering followed; the cut surfaces healed rapidly, and within a short time the passage was restored to a healthy condition and a normal caliber.

The left nostril next engaged my attention, and four weeks after the last operation I removed the thickened tissue on that side with the cold wire snare.

The antiseptic treatment, with the syringe and spray, was kept up throughout. The results were most satisfactory indeed. The tinnitus has almost entirely disappeared; the hearing has been much benefited. The patient now sleeps well, his general health has greatly improved, and he goes his way a happy and contented man.

TWO CASES OF COLOBOMA OF THE OPTIC NERVE SHEATH, AND ONE OF COLOBOMA OF THE CHOROID.

BY A. B. NORTON, M.D., NEW YORK CITY.

Colobomas of the optic nerve sheath and choroid are so extremely rare that to the writer it seems well to place on record all such cases, and having recently had three of these anomalies in my clinic at The New York Ophthalmic Hospital, I believe them worthy of record.

CASE I.—Geo. H——, aged eighteen, came to my clinic in October, 1889, to have his eyes examined for glasses. Says his vision has always been poor. Family history so far as patient knows gives no impairment of vision or eye trouble of any kind in any of his near relatives. O.D.V.$=\frac{20}{200}+2.50$ D.$+4.50$ D^c, ax. 90° V.$=\frac{20}{30}$ diff. O.S., V.$=\frac{10}{200}+2$. D.$\supset+3.25$ D^c, ax. 90,° V.$=\frac{20}{40}$. Ophthalmoscopic examination revealed in the right eye (Fig. 1.) what appeared at the first glance to be a supplemental nerve, for directly adjoining at the upper and outer side of the disc was seen a round white spot of about one-third the size of the disc, from about the center of which an artery emerged, while at the inner side other vessels were seen passing over the patch. The coloboma was in contact with the disc, and numerous fine opaque optic nerve fibers ran from one to the other, and also extended off for a short distance to the upper and inner side of the disc. At the outer edge of the disc and coloboma, and somewhat between the two, were small patches of pigment. The center of the disc was very white, and the vessels seemed to come off in a whorl at the inner side, with the exception of an artery and vein which disappeared near the lower border of the disc instead of connecting with the central vessels. The remainder of the fundus was normal in every respect.

CASE II.—Mrs. A. S——, age sixty-one, came to the hospital on March 10, 1890, for glasses, and gave the following history: Thought she had always been near-sighted, for when a child could never see as far as other children, but had never noticed that the sight in one eye was any poorer than that in the other. She further said she could see as well now, both for distant and near vision, as she ever could at any time of her life. Had four children from twenty-three to thirty-eight years of age and none have any eye trouble that she knew of. One sister, fifty-nine years old, had worn glasses for poor sight since thirty years of age;

FIG. 1.

another sister forty-nine years old, a dressmaker, wore glasses for near vision only, and a brother sixty years old had complained of poor sight worse in one eye than the other, but does not wear glasses. The patient's mother, eighty-two years of age, wore glasses for a while when about thirty-five or forty years old, but after a few years could see better without them and gave them up, and can still see to read a newspaper without glasses. This history has been detailed as pointing probably to myopia of the family and possibly some other hereditary trait of the eye. Should have been glad to have examined the eyes of the other members of the family had they resided in this locality.

O.D. V.$=\frac{15}{200}$, no improvement. O.S. V.$=\frac{15}{70}$ diff.—2.25 D. V.$=\frac{15}{40}$ diff. Ophthalmoscopic examination of the right eye (Fig. 2) showed the upper two-thirds of disc a clear white with a few obliquely placed pigment spots, and at the upper and outer side a retinal vein disappearing in the coloboma. The retinal arteries were few and small in size, while the veins were numerous and large. The choroid at the upper and outer side for a distance of about twice the size of the disc appeared thinned, but at no place surrounding this thinned portion or the disc itself was

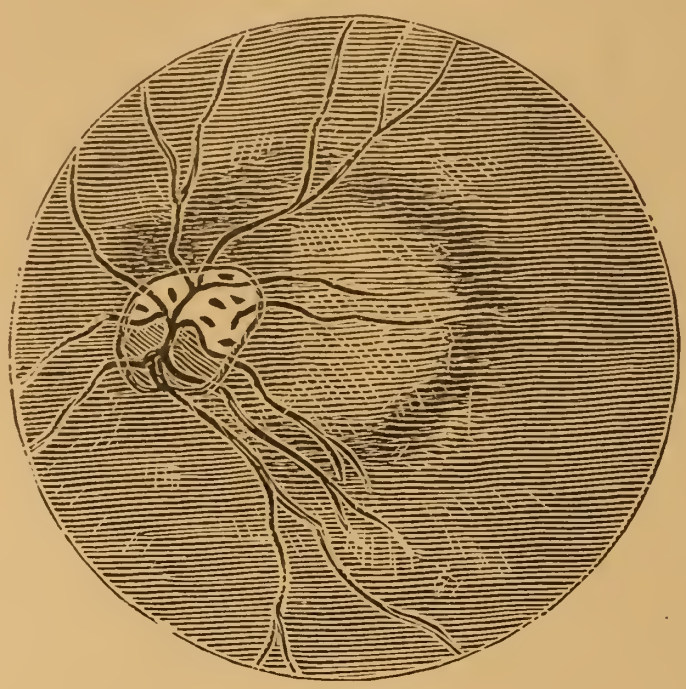

FIG. 2.

there any pathological pigmentation. The fundus elsewhere was normal.

CASE III.—In the left eye of the same patient as case last detailed was found a coloboma of the choroid (Fig. 3). The optic nerve in this case was perfectly normal; but distinctly separated from it at the upper and outer sides was a clear white spot, circular in shape, except a little flattened toward the disc, of about one-half the size of the disc. The coloboma has a slight line of pigment on the edge toward the disc, but none on any of its remaining borders, which were clear-cut and distinct. The superior retinal artery and vein passed over this coloboma, which was of a clear glistening white color.

The diagnosis of coloboma was made in this case, because the margins of the patch were sharply defined and everywhere surrounded by healthy tissue, while in sclero-choroiditis posterior or any other disease of the choroid there

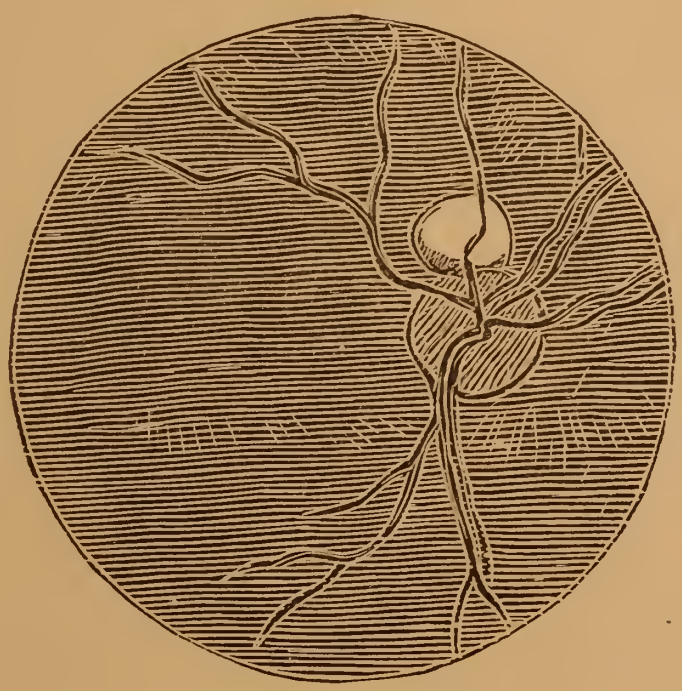

FIG. 3.

would have been degenerative changes of the surrounding tissues.

Further the history of the case gives no increase of the myopia so far as the patient's knowledge of her vision was concerned, and also because the floor of the coloboma was of a clear glistening white instead of the more yellowish white appearance found after choroidal troubles.

MAY INJURIES TO THE SPINE RESULT IN OPTIC NERVE ATROPHY?

BY C. F. STERLING, M.D., DETROIT, MICH.

My object in this brief communication is to stimulate discussion or induce communications on the subject, for the reason that it has been a question of some interest to me in view of three cases I have seen.

So far as I know, such a sequence or cause of atrophy is not laid down in the text-books, and I do not remember to have read any reports of cases in current literature bearing upon it.

The first of my three cases was a lady about sixty years old, who had fallen and seriously hurt her back, developing, if I remember rightly, some slight symptoms of impaired motor power. Some little time after (two or three months) she noticed a marked deterioration in the sight of one eye. Examination showed a visual acuity of a little less than $\frac{20}{50}$, not improved by glasses. The ophthalmoscope showed an atrophic condition of the disc, not very pronounced, but corresponding just about to the loss of vision as one would naturally estimate. The most careful questioning failed in any way to shake her statement that up to the time of her fall her vision was as good in that eye as in the other, and her daughter, who accompanied her, insisted in equally strong terms that her mother previously had never made the least reference to any difference in the vision of the two eyes. (The vision of one eye was $\frac{20}{20}$).

I should have mentioned before that she also complained of many severe neuralgic pains, dating from the accident, and apparently starting from the injured portion of the back, which if my memory serves was near the junction of the dorsal and lumbar regions.

The second case was of a discharged soldier applying for an increase in pension, basing his claim upon the loss of sight in one eye following a laceration in the back of his neck from a shell fragment on March 29, 1865, when before Petersburg, Va. The piece of shell tore the back of the neck quite badly, carrying away portions of the fifth and sixth cervical vertebræ, leaving a marked depression. After receipt of the wound he had a temporary paralysis of the left side from which he ultimately recovered.

Between six months and a year after dismissal from the hospital he noticed a gradual failure of sight in the left eye, which slowly increased until in about seven or eight years he had lost all perception of light. When I saw him about two years since he had a cataract, and the iris was more or less adhered posteriorly from an old iritis, the latter condition having come on a few years previous to his consulting me. He had no perception of light by any test that I could make, in the left eye, showing conclusively that some fundus difficulty existed. He informed me that some seven years prior to his visit to my office, he had consulted Dr. Frothingham, professor of ophthalmology at the University of Michigan, who had unquestionably pronounced his blindness to be in consequence of atrophy of the optic nerve. Between his visits to Dr. F. and myself, the cataract had developed and the iritis occurred.

The third case was that of a boy about fifteen years of age, who fell under a wagon, one of the hind wheels passing over his back. The boy was seriously hurt, and was an invalid for several weeks. After his recovery he was found to be blind in one eye. His employer, who was at that time visiting my office, mentioned the case to me, and having the two previous cases in my mind, I requested him to bring the boy to me for observation. This he kindly did, and the ophthalmoscope showed one optic nerve blanched to whiteness.

These three cases came under my observation at short intervals, and attracted my attention from the coincidences in their condition and history. Physiologically it would seem perfectly possible for the impairment of a special sense to follow an injury to the spine. Atrophy in connection with locomotor ataxy is well recognized. Why might it not follow as the result of traumatism? If others have observed similar cases I trust they will communicate them.

A CASE OF MONOCULAR AMBLYOPIA FOLLOWING THE EPIDEMIC INFLUENZA.

BY HENRY C. ANGELL, M.D., BOSTON, MASS.

Miss McC—— had the prevailing influenza just after Christmas. It was chiefly a bronchial cough, which improved after two weeks, but became worse again about the middle of January, and was then accompanied by considerable pain in the right side of the head and over the right eye. Dimness of vision was first noticed February 1. On February 6, V. O. D.$=\frac{1}{100}$; V. O. S.$=\frac{20}{20}$. No limitation of F., but blindness most pronounced centrally and over that portion corresponding to the "papillo-macula" nerve fibers of the retina. Color sense defective for red only. Pupil normal. No ophthalmic changes observable. Patient otherwise healthy. The amblyopia had apparently not increased during the past twenty-four hours. I advised no treatment, telling her to pay as little attention to the eye as possible, and asking her to call again in four days, when, if necessary, I would treat her. On her next visit, February 12, I found V. O. D.$=\frac{20}{20}$ and the color sense perfect. The improvement had begun two days after her first visit, and had been very rapid.

A STUDY OF TONSILLITIS.

BY WILLIAM S. MORRIS, M.D., PHILADELPHIA.

Probably there is no disease so common, so free from danger to life, and yet so interestingly erratic in the vagaries of its manifestations as tonsillitis. Certainly, no affection is so amenable to treatment and yet so tantalizingly uncertain as to its duration. It may last three days or it may drag on for three weeks. It may respond readily to the indicated remedy, or it may defy the bombardment of a score of drugs.

It is at the same time a godsend and a bugbear to the young practitioner. It is the former in those cases (fortunately the majority) where its incubation is rapid, its symptoms alarmingly—to the patient—active, and its retrogression or resolution equally speedy. The patient is pleased, the doctor receives the credit for his marvelous cure, and his reputation and his practice alike boom.

On the other hand, it becomes a bugbear when it occasionally stubbornly refuses to be healed. The physician has pronounced his diagnosis, and, rendered confident by his preceding successes, has probably prognosed an early recovery. Everybody is blissfully happy. Three or four days pass, and the patient grows worse instead of better. Explanations are due from the doctor, who falls back upon diathesis for his want of success. A week or ten days may roll around, and still the invalid feels miserable. The tonsils continue dreadfully sore, the fever drags on its slow course; perhaps the exudate increases, and may be so extensive as to appear diphtheritic. The family become alarmed, and suggest the possibility of the medical man being mis-

taken as to his diagnosis. The doctor, unless he had considerable experience, may become doubtful as to the character of his case, and, possibly, he may lose confidence in himself. Dissatisfaction is apparent in the faces of the patient and the relatives, and, last of all, inglorious dismissal may terminate his connection with the affair.

The new doctor called in may be a bit unscrupulous, or hasty; may call the disease diphtheria, and go to work with all the vim of the proverbial new broom. Resolution very likely will begin in a day or two, as it would probably have done anyway. The patient is immensely pleased, the family jubilant, the physician is sublimely self-appreciative, and the poor *confrère*, who bore the brunt of the fight, is ruined forever as regards his reputation with that particular household and its following.

Such are the "o'er true" possibilities of a tonsillitis, and the writer is confident that he has not overpainted the subject in the slightest degree.

Though a common and simple ailment, tonsillar inflammation of whatever variety is worthy of the utmost care as regards examination, prognosis, and treatment. The first duty on being called to a suspected case is to get the history of the patient, if not already known. The liability to throat troubles must be ascertained; the habits of eating, drinking, of breathing and of sleeping must be investigated. Are other members of the family subject to similar troubles? Does the patient smoke? Are there any diathetic conditions?

The objective symptoms must be noted. The pulse will be found in very many instances to be extremely rapid, reaching to 140 or more beats per minute in young individuals. The face is flushed, the eyes sparkling, or heavy, or dull. The thermometer will register a temperature anywhere from 100° to 105°, or more in exceptional cases. The subjective symptoms usually present are headache, more or less intense, backache, pains in the limbs, nausea, thirst, often, however, none, "creepy" feelings," or pronounced chill and anxiety, or apathy.

A careful inspection of the throat reveals a hyperæmia of one or both tonsils, as well as of the anterior and posterior half arches and the uvula.

In cases of superficial character, the redress may be slight, the swelling very little or entirely absent; there may be no enlarged glands in the sub-maxillary region, the tongue may be but slightly coated, and the patient, aside from slight fever or dysphagia, may suffer but little.

This is probably a light catarrhal or sympathetic inflammation, from cold, from smoking, from over-use of the voice, or from stomachic derangement. A few doses of either Merc. viv., Bell., Nux vom., Puls., Ant. crud., Guiac., Gels., or Acon., will bring about recovery. A gargle of alcohol and water, or of chlorate of potash, will relieve the pain in the mean time.

If the inflammation is more pronounced, and the crypts and lacunæ are involved, the tonsils will show more swelling, the tongue will be thickly coated or furred, with prominent papillæ, the subjacent glands will be enlarged, the breath heavy; one or more whitish spots will be present on the tonsils, with, later, a coalescence of these, giving a membranous appearance to the accumulation. This may extend over a large portion of the tonsil, even up to the palatine arch, and the opposite glandular structure may be similarly affected. The fever will probably be high, the subjective and objective symptoms may be really alarming to the patient, the family, and even to the doctor. Unless care is exercised at this point in the examination, the physician may pronounce it the dread diphtheria. A thorough inspection, however, will reveal the true condition. The membrane lacks the characteristic dirty appearance of the graver disease, the edges are sharply outlined, and not curled or darkened; the never-to-be-forgotten odor of diphtheria is absent; there is less real prostration; a careful scraping away of a portion of the exudate will often disclose the angry mouth of a crypt, and an inflamed but non-bleeding mucous membrane. The administration of Merc. jod. rub. or flav., low, or of Hepar, 2x or 3x, in fre-

quently repeated doses, and a gargle of phenol and warm water, or of yeast and liquid honey, in the proportion of two-thirds yeast to one of honey, will bring about a marked improvement in from twenty-four to seventy-two hours.

The following case is a good example of this form of tonsillitis:

On Friday, Jan. 10, 1890, was called to see Ida S., aged twenty-eight. Found her in bed, face flushed, eyes bright, great pain on swallowing, pulse 120, temperature 104°; right tonsil bright red, with whitish glistening spots upon it, nausea and headache. Prescribed Bell. and Nux, in alternation, and directed cloths wrung out of cold water to be applied to the throat. Saturday morning, patient worse, right tonsil almost covered with exudate, breath foul, tongue yellowish white; left tonsil and portion of palatine arch covered with whitish patches; fever 105½°. Prescribed Bell. and Hepar, 2x trit., every hour in alternation; cracked ice to suck; cold pack to throat, yeast and honey gargle, and iced milk to drink. Evening: patient much better. Temperature 101°, pulse 98. Left tonsil clean, right only partially covered with exudation. Continued the Hepar, but changed Bell. to Merc. jod. rub. Sunday, 12th, right tonsil clean, dysphagia entirely relieved; only slight stiffness of maxillary articulations. Temperature normal, pulse 80.

Although I have treated a large number of tonsillar affections, I have never seen one, presenting such severe symptoms as this case did, yet recovering in so short a time. I can very readily understand how either a novice in the healing art, or a careless diagnostician, would have called this particular case of acute lacunal tonsillitis, diphtheria. In fact the writer has been called in consultation several times where just such an error had been made. It is quite certain that one physician considered his consultant an egregious idiot, because the latter insisted that the case in question was one of follicular tonsillitis, and nothing more. Happily, at least for the patient and the consulting physician, the diagnosis of tonsillitis proved to be the correct one, for the patient was well in three days.

Cryptal or lacunal inflammation is usually more super-

ficial in character, than when the follicles become involved. In the latter condition the cheesy accretions, consisting of decomposed mucus, desquamative material, and leucocytes, seem to become impacted, and in some cases encysted, and will remain *in situ* for weeks unless active measures are adopted, such as curetting and antiseptic and astringent applications.

I remember one case that came to the Hospital Dispensary for six weeks. He liked to take medicine and I liked to experiment, hence the man had an encysted follicular tonsillitis during all that time. Finally I emptied the little sacs, and in two or three days the trouble was gone.

Again a simple lacunal inflammation of the tonsil may drag out an exceedingly slow course where patients are of a tuberculous, scrofulous, or rheumatic diathesis, or are run down after long illness.

Nellie B., aged fifteen, had typhoid fever about two months before I attended her for the throat affection. I found her pale, flabby, and exceedingly weak. The tonsils were dotted with several good-sized whitish patches : the hyperæmia was dull rather than bright. Fever never above 102°. Pulse compressible and slow. System seemed so sluggish that medicines failed of their usual effect. The exudate continued, and as one spot disappeared, or coalesced with another, others would appear. Removing them seemed to have no effect in stopping the abnormal secretion. Sulph., Hepar, Ignat., Gels., Bell., Merc. jod. rub., Kali bi., and permang., were tried with equally unsatisfactory results, and it was nearly three weeks before reaction was established and the tonsils restored to their normal condition.

I have cited these few cases merely to illustrate the extremes of superficial tonsillar affections. The average case runs its typical course. The diagnosis is easy and the cure is speedy. It is only necessary to be always careful and observing, and the mistake of diagnosing tonsillitis diphtheria, or *vice versa*, will be avoided.

CLINICAL EAR CASES.

BY HENRY C. HOUGHTON, M.D., NEW YORK CITY.

Mrs. R——, age fifty. First seen Nov. 29, 1875. For five years had had treatment with little relief : admitted a history of chronic naso-pharyngeal troubles for a longer time. Canals clear. R. *Mt.* depressed, but clear. L. *Mt.* more retracted, less mobile. Pharynx, thin tissues, granular. Et., dilatable by Pol. H.D. watch R. $\frac{20}{20}$, L. $\frac{2}{20}$. She was under treatment till 1876. March 24.—H.D. R. and L. $\frac{20}{20}$.

1877. Feb. 28.—H.D. R. $\frac{20}{20}$, L. $\frac{10}{20}$; under treatment till May 29 ; then H.D. R. and L. $\frac{20}{20}$.

1878. Feb. 9.—H.D. R. $\frac{20}{20}$, L. $\frac{8}{20}$; under treatment till May 15, R. $\frac{20}{20}$, L. $\frac{18}{20}$.

1879. March 29.—H.D. R. $\frac{20}{20}$, L. $\frac{8}{20}$; treated till May 28, then H.D. R. $\frac{20}{20}$. There was a temporary relapse at one time to $\frac{10}{20}$.

1881. April 20.—H.D. R. $\frac{20}{20}$ L. $\frac{10}{20}$. A good year.

1882. Feb. 4.—H.D. R. $\frac{20}{20}$, L. $\frac{3}{20}$; under treatment till June 6. Steady gain till H.D. reached R. and L. $\frac{30}{20}$.

1883. April.—L. $\frac{8}{20}$. Faradism, then $\frac{10}{20}$. Treated till May 16, then L. $\frac{20}{20}$.

1884. February—L. $\frac{8}{20}$, treated till March 15 ; then L. $\frac{12}{20}$. Faradism, then $\frac{20}{20}$.

1885. March 4.—To May 26, with same result.

1886. January 9.—Single visit ; R. $\frac{15}{20}$. Pol., then H.D. L. $\frac{20}{20}$.

1887. February 16.—H.D. L. $\frac{8}{20}$. Faradism, Pol. $\frac{12}{20}$.

1888. May 23.—L. $\frac{10}{20}$. Faradism, Valsalva, then L. $\frac{12}{20}$. Treated until May 28, then after Far. and Pol., L. $\frac{20}{20}$.

1889. April 4.—L. $\frac{8}{20}$. Far., Val., L. $\frac{10}{20}$; treated until May 7, then $\frac{12}{20}$. Far., Val., then L. $\frac{20}{20}$.

1890. Jan. 13.—L $\frac{2}{20}$. Far., Pol., treated until March 13, then $\frac{10}{20}$. After treatment, $\frac{15}{20}$, with improved naso-pharyngeal condi-

tions, which encourage us to believe the normal standard will be reached in a few weeks.

Rev. Mr. N——, aged forty-one. A tall, dark, slim dyspeptic. Had earache when a child, and dull hearing at times for twenty years. Now so deaf that it interferes with his duties as a clergyman, especially in visits to the sick. Canals clear. *Mtt.* depressed, R. specially so, apparently adherent. Pharynx, thin tissues, not follicular to any great extent.

Sept. 3, 1886.—H.D. watch R. $\frac{1}{240}$, L. $\frac{8}{240}$. Politzer R— L +, then stop watch heard, R. $\frac{3}{240}$, L. $\frac{17}{240}$. Put upon Kali muriaticum.

Sept. 13.—Better. Faradism. Pol. + R. and L., then R. $\frac{6}{240}$, L. $\frac{2}{20}$. Same method of treatment till Oct. 4 ; then H.D. R. $\frac{21}{240}$, L. $\frac{4}{20}$. After the sitting that day, R. $\frac{28}{240}$, L. $\frac{5}{20}$. Treatment weekly during October.

Nov. 1.—R. $\frac{15}{20}$, L. $\frac{20}{20}$. After treatment that day, R. and L. $\frac{20}{20}$. Treatment continued.

Dec. 20.—R. and L. $\frac{20}{20}$. Omit treatment one month. Continue internal use of Kali. mur.

1887. Jan. 17.—R. and L. $\frac{20}{20}$. Pol. +, then sounds more distinct. Continue Kali. mur.

Oct. 24.—R. and L. $\frac{20}{20}$. Valsalva's experiment modified by my direction : close the external auditory canal with the middle finger, while the nose is closed by the thumb of the same hand. Ett. dilatable, after inflation, more clear perception.

1889. May 6.—Says, " I now find myself begging pardon." R. $\frac{3}{20}$, L. $\frac{10}{20}$. Faradism with Eustachian electrode ; then Val. modified as above ; after Val. R. $\frac{4}{20}$, L. $\frac{20}{20}$. Kali. mur.

June 10.—Same treatment twice since above date ; now R. and L. $\frac{20}{20}$. Ett. dilatable. Kali. mur.

July 20.—" Doing nicely." R. and L. $\frac{20}{20}$. Kali. mur.

Dec. 21.—Has been well till now. Dull. R. $\frac{20}{20}$, L. $\frac{20}{20}$, with difficulty. Far., Val., then R. and L. $\frac{20}{20}$. Ett. easily dilatable. Kali. mur.

I have copied these two cases from my records in order to point one lesson. Patients need to be taught to follow up the treatment of aural disease as they have been taught to attend, at once, to ophthalmic affections. The influence of heredity is all the other way, and many failures of func-

tion in audition are simply due to neglect and hopelessness. Many similar cases could be cited to show that it is necessary to persist in the treatment of chronic catarrh of the middle ear. Not only is there the constant effect of climate to combat, as in the sea-coast or in the lake regions, but each winter a relapse occurs; needing not only more or less prolonged attention to overcome the relapse, but as the inherent nature of the disease is in the direction of atrophic changes, adhesions, etc., hence, it must be impressed upon the mind that only by attention to this matter at least once each year, ordinarily each spring, can one hope to retain even the degree of power secured by successful treatment. On one occasion I succeeded in restoring the function to a degree that was very gratifying, and gave the advice already suggested; some years afterward the patient appeared, having lost not only the degree of power reached in the one ear by treatment, but a large share of nature's gift to the other ear. I shall never forget the blame charged to me on account of my not being urgent enough in my instructions, not to neglect this matter. It is better to appear too solicitous, even at the risk of being charged with motives of not the very highest order, than to err on the other side. One then has the approving conscience. Let the patient's motto be, "Eternal vigilance is the price of liberty."

PERFORATIONS OF THE MEMBRANA TYMPANI.

BY E. J. BISSELL, M.D., ROCHESTER, N. Y.

From the limited literature upon perforations of the tympanic membrane one would infer that the subject was of but slight importance, and when referred to in text-books he would be led to believe that the closure of large perforations was quite common. Such has not been my experience. I believe that the future welfare of an ear depends to a considerable extent upon the closure of a perforated tym. panic membrane. With some exceptions the hearing will be better and the tendency to inflammatory relapses will be less after a perforated tympanic membrane has once healed over. This being the case greater effort should be made than in the past to secure this desired result. Many cases are dismissed as soon as the suppuration is cured, and no effort whatever is made to close the perforation. By many, if their practice represents their belief, it is looked upon as of but little importance. This, I believe, to be a great mistake. I have nothing new to offer in the way of remedies to secure this result, those usually recommended having served me well.

The closure of large perforations involving two-thirds or more of the membrane is quite rare either with or without treatment. The following case is the most remarkable in my experience both as to the closure of the large perforation and the amount of hearing secured.

Mr. O——, student, aged thirty-four, consulted me Sept. 13, 1887, regarding his right ear, which was discharging profusely. About three weeks previous, he contracted a severe cold, which as he

said went "right to his ear." In three days the ear broke and the discharge became very irritating. When I first saw him he was suffering from sub-acute pharyngitis ; the external auditory canal was red, swollen, and tender ; there was a very large kidney-shaped perforation of the tympanic membrane, fully one-half of the membrane having been destroyed ; the walls of the tympanic cavity were red and swollen, and secreted a profuse, irritating, purulent discharge. He complained of but slight pain and throbbing in the ear. His hearing as tested by my watch was $\frac{c}{40}$. His general health was good. While using appropriate internal remedies, I treated the ear by the dry method, cleaning the ear each day with absorbent cotton and then applying boracic acid At the end of two weeks the discharge was not so irritating, but the perforation had changed from kidney-shape to heart-shape, and more than three-fourths of the tympanic membrane had been destroyed. In three months from the time I first saw him the discharge had ceased, and the patient complained of no trouble, except some deafness. The perforation still remained, but was a trifle smaller. As I was about to begin treatment to assist in restoring the membrane, the patient was obliged to leave the city. He returned in March, and called at my office, and said that he had no trouble with his ear. On examination I found the perforation entirely closed, the manubrium greatly depressed, and his hearing $\frac{30}{40}$. I had the privilege of examining the ear last summer, after a lapse of one year, and found the ear still in good condition.

Because nature repaired this solution of continuity unaided by any local remedies, I do not believe that it teaches that we should adopt the "let alone" method, for I have seen better results with treatment than without. There is one other point of interest in the case, and that is, that this result was secured after the use of boracic acid while the ear was discharging. There are those who claim that boracic acid prevents the closing of a perforation. Certainly this case does not support such a claim.

In a constitution so free from dyscrasia, why should such a large perforation develop? If there was any dyscrasia present in the case, why did it heal?

CLINICAL EYE CASES.

BY N. B. COVERT, M.D., GENEVA, N. Y.

Much has been already published in relation to eye strain arising from various causes; the conditions of refraction, as well as the various forms of heterophoria. Yet I may be pardoned in presenting a few cases that have proved interesting to myself and patients, and if there should be nothing new to the readers of this journal, it may help to establish the principles which have been so thoroughly tested within the past few years, and through which many physicians have found a solution of their cases, which were formerly perplexing and very difficult to manage.

CASE I.—C—— L——, age ten years, had always been a bright healthy child, passing through her early infancy and childhood with no unusual symptoms. At the age of seven years she commenced school, and when there for a short time was suddenly seized with convulsions which could not be accounted for by any family history or the physical condition of the child or its surroundings. Upon the advice of the family physician, the child was kept from school, and allowed to run and play out-of-doors. This was in September, 1886. For over a year she remained free and was not asked to confine herself to any study or books, until 1888, when the parents sent her to school again, and very soon she was again seized with convulsions.

The parents as well as the family physician thought it might have been caused by foul air in an over-crowded schoolroom, so a private teacher was engaged, who commenced to teach the child at home. The confinement was not as great and the number of hours for study less; thus it was several weeks before another convulsion occurred, but from that time on they occurred more

frequently and were more severe, until they were pronounced epileptic convulsions by several prominent physicians and treated accordingly.

Upon the 19th day of June, 1889, the child was brought to my office for examination, with a request of the physician sending patient to me that her eyes be tested. She appeared very nervous and easily excited. Examination showed the following: V.=$\frac{20}{20}$; abduction 5°; adduction 14°; esophoria 3° distance; in accommodation, 3°. +.75 D. lens improved her vision to $\frac{20}{15}$. I advised the use of +.75 D., to be worn constantly until she came again.

June 22.—Has had no convulsions, is less nervous, and is sleeping better at night. Commenced exercising the muscles of the eye and used galvanism; also ordered atropia put into eyes before next visit (about ten days from first visit). Upon making the attempt to drop the atropia into the eyes, she went into a convulsion which so frightened her father that he objected to the use of the drops at that time. I said to him that I thought his child was suffering from hyperopia and insufficiency of the external recti muscles, and that those conditions had much to do in causing the convulsions from which his child was suffering; and that I was very anxious to test her eyes under atropia to ascertain the exact condition of her refraction. But it seemed best not to insist upon its use, and therefore I continued the weak glasses and use of the prisms.

She continued to improve, and week after week passed, until about the tenth week she had a very light convulsion. This might have been accounted for by her attempting to use her eyes for study after having exercised with her prisms, with which she was provided, and which she wore every day—the weaker pair 2° base in, the stronger 4°. In her treatments at my office her eyes were frequently tested and showed constant improvement in the strength of all the muscles of the eye.

The esophoria was entirely removed when tested with glasses +.75 D. with phorometer until the images stood directly in a vertical line. Abduction, 14°; Adduction, 40°; and vision $\frac{20}{15}$ with glasses.

In this condition she returned to her home, and up to Jan. 1, 1890, she had been very well and free from convulsions.

I have never felt quite certain of the result in this case

on account of the inability to use atropia. But I was satisfied that the convulsions were due to the eye strain, and when that was removed that the case would find relief from the convulsions. And if able to relieve for three months why should we not expect a permanent relief and cure when the eyes are relieved from all strain and irritation?

CASE II.—Mrs. W—— presented herself at my office in 1886, giving the following history: For the past few years she had been subject to attacks of hystero-epilepsy. She had been treated for one year with bromides, but with no cessation of the attacks. Her symptoms were confusion when looking at a crowd of faces, as in church; inability to hold objects for any length of time, the effort to so do producing severe pains in and about the eyes; she was also very nervous, being troubled with insomnia. At the time a pair of convex glasses, +.75 D., were prescribed for constant use. She improved in every respect, her headaches partially ceased, and the attacks of hystero-epilepsy did not recur for over two years, when she had two, one on a gala day and the other at church, being due probably to the excessive strain on the eyes. I now tested her muscles with the phorometer, when there was found an esophoria of 4° for distance and 4° in accommodation. The eyes were not tested with the glasses which she used constantly. There was no hyperphoria. The eyes were treated with prisms base in, increasing the prism as the muscle developed. She could overcome a prism of 6°, but it caused her to become "faint at the stomach." Her eyes felt better for a while, but then they grew worse again. The phorometer showed that the esophoria had been but slightly reduced. I advised a tenotomy, which was granted. The internal rectus was cut according to the Stevens' method, but the entire deviation was not corrected, as the patient had one of her attacks while undergoing the operation. After the operation there was less than one degree for distance, and none in accommodation. Her headaches have entirely ceased. She has not had any of her "spells" since the operation, and is in every way vastly improved.

CASE III.—Rev. J. H. W—— had for the past few years been doing missionary work in India. While there he was taken sick with typhoid fever, and during his convalescence he used his eyes while lying in a prone position. This severely tried them, and

he was obliged to undergo treatment. Since then he had not been able to use his eyes for any continuous effort. He had been treated at Clifton Springs for nervous prostration. One physician had told him that he was threatened with brain trouble. He gave the following symptoms: Head is easily confused and feels "muddled"; he has severe pains over the temples and at lower portion of the brain, and is troubled very much with insomnia, especially noticed after an evening's reading. He had consulted a noted oculist of Brooklyn, but he disapproved of Stevens' method of relieving his eyes, and gave him +.75 D., saying his eyes would become strong as his health improved. On testing his eyes with the phorometer he showed an exophoria of 2° for distance and 6° in accommodation. He was given Ruta grav. internally, and a teaspoonful of brandy to a tablespoonful of water to bathe his eyes. By daily use of the prisms for two weeks he overcame a prism of 50° base out, and no heterophoria could be detected either for distance or in accommodation. His eyes ceased to trouble him, and he had no pain over them or in the back part of the head. His health has rapidly improved and his insomnia annoys him no more. He says, "There is a clearness now that hitherto I knew not, and I can use my eyes with comfort."

THERAPEUTICS AND CLINICAL DATA OF DISEASES OF THE NOSE, THROAT, AND LARYNX.*

BY J. A. TERRY, M.D., NEW YORK CITY.

THE NOSE.

GROUP OF PRINCIPAL DRUGS ACTING ON THE INTERNAL TISSUES OF NOSE.—Acon., Amm. carb. and mur., Arsen., Bell., Cepa, Calc-c., Graph., Hep., Iod., Kali bich. and carb., Kali hydr., Lycopod., Merc., Natr. mur., Nitr. ac., Nux vom., Phos., Petrol., Pulsat., Sanguin., Silic., Sulph., Thuja.

ACONITUM.

PATHOLOGICAL INDICATIONS.—Coryza, acute and fluent. Epistaxis. Acute stages of inflammation of Schneiderian membrane without tissue lesions or changes.

CLINICAL.—"In the commencement of a cold, where there is a synochal fever, as we find it most frequent in children, tender women and sensitive persons after a sudden cold."—*Kafka.*

"In cold of the head, with headache and roaring in the ears, slight fever and sleeplessness.—*Rosemberg.*

"Cold of nursing babies; sneezing, running of the nose; hoarseness and rattling in the throat; burning heat all over and accelerated pulse and breathing."—*Hartmann.*

"Incipient coryza, nares hot and dry, or with hot fluid discharge, with chills and fever. Hæmorrhage of bright, hot blood, with anxiety." (Ham., Secale. Phos., Croc., blood dark.)—*T. F. Allen.*

Aconite is sometimes indicated in the first acute stages of inflammation of the Schneiderian membrane, and the sen-

* From "Clinical Manual," soon to be published.

sation of *dryness* and *heat* is then characteristic, as well as the *hot* discharge of mucus or blood. Violent sneezing, chilliness and fever may be present, particularly if a draught of cold air or a regular cold has been the cause.

AGARICUS.

PATHOLOGICAL INDICATIONS.—Coryza (with neurosis). Spasmodic sneezing.

CLINICAL.—"The symptoms of irritation in the nose, and the spasmodic sneezing as well as the discharge of pure water from nostrils *without inflammatory symptoms*, all point to its use in nervous complaints, with these peculiarities. Whooping-cough, chorea, etc."—*T. F. Allen.*

ALLIUM CEPA.

PATHOLOGICAL INDICATIONS.—Coryza acute and fluent, generally with conjunctivitis and laryngitis.

CLINICAL.—Acute coryza, fluent and exoriating the nostrils, on account of *the acrid* character of the discharge; while this acridity *is absent* in the profuse lachrymation which generally accompanies the concomitant conjunctivitis; the tears are burning and smarting, but without excoriating the lids, as a rule. The larynx is generally involved in this acute catarrhal process, as will be described hereafter.

ALUMINA.

PATHOLOGICAL INDICATIONS.—Chronic nasal catarrh. Ulceration of mucous membrane. Ozœna. Anosmia. Swollen and red tip. Naso-pharyngeal catarrh.

CLINICAL.—Soreness and scabs in the nose, with discharge of thick, yellow mucus: Ozœna. (L.) "Chronic nasal catarrh, with scurfy nostrils or discharge of indurated masses of mucus; the nose is sore internally, and sometimes ulcerated; the tip is somewhat swollen and red, associated with internal soreness. In post-nasal catarrh, with loss of smell and pain in root of nose." (Natr. mur.)—*T. F. Allen.*

AMMON. CARB.

PATHOLOGICAL INDICATIONS.—Acute and chronic dry coryzas. Epistaxis. Congestion and thickening of mucous

membrane. Obstruction of nose. Chronic nasal catarrh, with the characteristic discharge.

CLINICAL.—The cavernous erectile tissue, immediately beneath the Schneiderian mucous membrane, is the locality where this drug has its affinity of action. It will cure stoppage of the nostrils, acute or chronic; in children this obstruction will prevent them from sleeping, causing nervous starting as soon as falling asleep. The discharge accompanying the catarrhal state is acrid and burning, of bloody mucus or purulent. "Epistaxis at the time of washing the face or hands, or after eating, is characteristic of the drug." Patients requiring the carbonate of ammonia are generally anæmic, their blood has lost its balance of normal composition; hence epistaxis, hæmorrhages, etc., from too much fluidity, and extravasation.

AMMON. MUR.

PATHOLOGICAL INDICATIONS. — Anosmia. Epistaxis. Fluent coryza. Hay fever.

CLINICAL.—"Profuse secretions from the mucous membranes" is one of its physiological actions.

"Clear watery mucus running from the nose and corroding the lips."

"Coryza, with acrid, watery discharge, ulcerative pain in nostrils, nose very sore to touch." "Discharge scalding hot, *also with cold feeling between shoulders*, loss of smell."—*T. F. Allen.*

ANTIMON. CRUD.

PATHOLOGICAL INDICATIONS. — Eczematous eruptions around nostrils.

CLINICAL.—"A kind of eczema about nostrils, which become sore, cracked, and scurfy."—*T. F. Allen.*

Sore, cracked and crusty nostrils (Graph., Nitr., ac., Petrol., Ranunc. b.).

ANTIMON. SULF. AURAT.

PATHOLOGICAL INDICATIONS.—Coryza, acute. Chronic nasal catarrh. Epistaxis. Pimples and acne on nose. Concomitant bronchitis.

CLINICAL.—"Nasal catarrh, acute or chronic, complicated

generally with a similar catarrhal affection in the bronchial tubes." Pimples or acne on face or nose. Epistaxis—on washing body. This drug combines the actions of antimony and sulphur, and has been employed successfully in disorders of the respiratory organs. "It is of great value in acute and chronic nasal and bronchial catarrh." (Comp. Arsen. jod.)

ANTIPYRINE.

PATHOLOGICAL INDICATIONS.—Acute coryza.

CLINICAL.—"Acute coryza, frequent sneezing, with profuse watery discharge and burning in the nose; the 1st centtrit. used."—*Decker.* If accompanied with frontal headache, its indication is stronger.—Several cases.

APIS MEL.

PATHOLOGICAL INDICATIONS.—Erysipelatous inflammation of nose, externally. Nasal *diphtheria.*

CLINICAL.—"In erysipelatous inflammation of the nose externally, red swelling, sharp stinging pains." "Coldness of the tip of nose when the throat begins to be sore, is a pretty sure indication."—*T. F. Allen.*

ARGENTUM NITR.

PATHOLOGICAL INDICATIONS.—Anosmia. Epistaxis.

CLINICAL.—"Epistaxis and anosmia," clinically.

"Coryza, with chilliness, sickly look, lachrymation, sneezing, and stupefying headache; discharge of pus with clots of blood; great itching of the nose.—*Mat. Med.*

ARNICA.

PATHOLOGICAL INDICATIONS.—Epistaxis.

CLINICAL.—"Tenacious epistaxis has been cured by this medicine after traumatism on the nose, either recent or from remote date.

"The nose-bleed of arnica is characterized by dark, fluid blood; especially during low forms of fever or in whooping-cough. (Comp. Carbo. veg.)—*T. F. Allen.*

ARSENICUM ALB.

PATHOLOGICAL INDICATIONS.—Coryza, fluent. Sense of smell too keen.

CLINICAL.—Fluent coryza; the discharge is *burning and excoriating* (Cepa). Much sneezing; extreme sensitiveness of smell, cannot bear even the smell of food; *exercise and warmth* are agreeable, and exposure does not aggravate the disease. The coryza is generally fluid, without ulceration or obstruction. It is a valuable remedy in acute coryza of anæmic and debilitated people and in malarious districts.

ARSENICUM JODAT.

PATHOLOGICAL INDICATIONS.—Coryza. Chronic nasal catarrh. Ozœna. Ulceration of nose (internal). Hay fever. Asthmatic symptoms.

CLINICAL.—Its action on the mucous membrane of the respiratory tract is more specific than the former. The predisposition to catch cold easily, and a tubercular or scrofulous diathesis are sure indications for its successful employment. It suits better the chronic forms of catarrhal affections of the nose; the burning sensation and acrid discharge are present, and *asthma* or *hay fever* may be concommetants, being an excellent medicine for both of these diseases.

ARUM TRIPHYL.

PATHOLOGICAL INDICATIONS.—Fluent coryza. Diphtheritic and scarlatinal nasal complications. Hay fever. Inflammation of frontal sinuses. Nasal diphtheria.

CLINICAL.—"A valuable remedy in coryza of children with discharge so acrid and ichorous that the nostrils and upper lip became sore, cracked, and ulcerated. Burning and itching, compelling the child to bore and pick the nose and lips until they bleed. The nose is completely stopped up, notwithstanding the fluid discharge; in diphtheria and scarlet fever the discharge becomes offensive, and is a good indication for this drug."

"In hay fever there is *a terrible pain* at the root of the nose; the frontal sinuses may be inflamed; the nose and throat feel *raw*."

AURUM MET.

PATHOLOGICAL INDICATIONS.—Caries and exostoses of turbinated and other nasal bones. Ulceration of mucous

membrane. Ozœna, syphilitic and scrofulous. Chronic nasal catarrh, with hypertrophy of nasal mucous membrane. Inflammation of external nose. Syphilitic gummata, internal. Thickening of nasal lachrymal duct.

CLINICAL.—Diseases of the bones and cartilages of the nose; destructive inflammation of the nasal mucous membranes, with deep ulcerations, caries, and exostoses of membranes, cartilages, or bones, very sensitive to touch and boring pains, worse at night. The destruction of tissues is accompanied by fœtid, purulent, and bloody discharges, with acute sense of smell generally; patient seems to smell all the time the fœtid suppuration. Scrofulous and syphilitic diathesis are always at the bottom of such nasal lesions.

BARYTA CARBON.

PATHOLOGICAL INDICATIONS.—Like ammon. carb., the submucous cavernous erectile tissue seems to be involved in the catarrhal process. Coryza of new-born. Chronic nasal catarrh of old people.

CLINICAL.—"Nasal catarrh of children, with obstruction and great swelling of upper lip." "Chronic nasal catarrh in old people, *with complete stoppage and great dryness at night;* can only breathe through the mouth." The author cured with this remedy a chronic nasal catarrh of 40 years duration. After using the medicine from low to high dilutions, the cure has remained permanent up to date (18 years).

BELLADONNA.

PATHOLOGICAL INDICATIONS.—Inflammation and congestion, internal and external nose. Erysipelatous inflammation. Epistaxis. Over-sensitiveness of smell.

CLINICAL.—"Redness and swelling of the nasal mucous membrane." "The nose externally swollen, red and hot" (inflammation). Epistaxis, with red face and throbbing headache. Over-sensitiveness of smell. Erysipelatous inflammation of nose and cheeks.

BENZOINOL.

PATHOLOGICAL INDICATIONS.—To apply locally in: Dryness of mucous membrane. Herpetic and eczematous

eruptions in nose and around it. Cracked and crusty nostrils. Fœtid and ichorous discharges. Ozœna. Ulcers. Chronic catarrhal disorders of nose, pharynx, and larynx. Formation of hard scabs. Obstruction of the nostrils, etc.

CLINICAL.—"Oleum petrolatum benzoinatus." This is one of the best preparations for lubricating and protecting the nasal mucous membrane, and that of the throat and larynx. It is used locally with a brush or raw cotton as a protective or a disinfectant of fœtid and ichorous discharges. With the spray, in acute and chronic inflammation of nose, throat, and larynx, it combines the antiseptic properties of benzoic acid with the dermatic of petroleum and its soothing action on the mucous membranes. Being unirritating and completely bland to the tissues, its use is agreeable and soothing, and its application does not interfere with the action of remedies.

BROMIUM.

PATHOLOGICAL INDICATIONS.—Coryza. Inflammation of frontal sinuses (?). Acne on face. Anæsthesia. Anosmia (?).

CLINICAL.—"Coryza, with pressure at the root of nose; internal soreness; watery, excoriating discharges, nose seems stopped."—*T. F. Allen.*

Acne on the face and anæsthesia of mucous membrane may be present. "For scrofulous children with enlarged parotids." Goitre. "Obstinate coryza with soreness beneath nose and on margins of nose." "The right nostril seems to be more affected."

BRYONIA.

PATHOLOGICAL INDICATIONS.—Inflammation of frontal sinuses. Coryza, fluent. Coryza, suppressed, followed by headache. Epistaxis, vicarious.

CLINICAL.—The characteristic frontal headache of this drug appearing often with acute rhinitis, points decidedly to its action in the frontal sinuses. "Clinically its use has proved beneficial in sudden suppression of the catarrhal discharge, followed by dryness and headache." "Epistaxis, either vicarious or from suppressed menstruation and peri-

odically occurring, is a leading indication." The remedy, *par excellence*, for scrofulous children, having the nose and upper lip tumefied, with or without scrofulides on or around it.

CALCAREA CARB.

PATHOLOGICAL INDICATIONS.—Nose and upper lip swollen (scrofulosis). Coryza, acute and chronic. Ozœna, epistaxis. Polypus nasi (mucous). Excessive redness of the mucous membrane of both nose and throat (not a congestion nor a chronic venous hyperæmia, but rather an evenly diffused heightened color); excessive sensitiveness to local applications, especially to stimulants, absorbents, and astringents.—*C. L. Cleveland.*

CLINICAL.—"Coryza, acute, with *clear* and *watery* secretion, alternating with stoppage. If the catarrh is chronic, the discharge is purulent, thick and fœtid; the cervical lymphatic glands are generally enlarged." "Ozœna, with ulceration and swelling at the root of nose." Fat children, inclined to nose-bleed, delayed dentition, and sweaty occiput. "Polypus nasi" (mucous variety). This drug, combined with iodine, sulph., and phosph., destroys the scrofulous diathesis.

CAMPHOR.

PATHOLOGICAL INDICATIONS.—Acute coryza, dry. Hay fever.

CLINICAL.—It may be used *as a palliative* in hay fever and different forms of acute coryza, either internally or by olfaction; its effect is evanescent. "A general chilly feeling predominates, without easy reaction, particularly in damp, cold weather." "In the prodromic stages of violent coryza, generally dry, with much sneezing and flatulence."

CARBO VEGETAB.

PATHOLOGICAL INDICATIONS.—Epistaxis (old people; scorbutics). Varicose veins (internal and external). Hypertrophy of mucous memb. Sponginess of mucous memb.

CLINICAL.—"Recurring nose-bleed in persons who have been overtaxed with anxiety, especially in elderly people. Varicose veins on nose."—*T. F. Allen.*

The condition of the Schneiderian membrane may be found to be spongy, hypertrophied, or showing varicose veins, rupturing or tearing easily, and producing epistaxis of dark blood.

CAUSTICUM.

PATHOLOGICAL INDICATIONS.—Warts, pimples, ulcers, crusts, on tip of nose. Anosmia. Coryza, with laryngo-tracheitis.

CLINICAL.—"Old warts, hard pimples, ulcers and crusts on tip of nose." "Dry catarrh with obstruction of both nostrils, or fluent coryza with laryngo-tracheitis." Anosmia.

CHINA.

PATHOLOGICAL INDICATION.—Epistaxis.

CLINICAL.—"Smell very acute. Nose-bleed in anæmic persons or sanguineous temperament, with ringing in ears, or relieving headache." "Epistaxis of arterial blood, profuse and habitual; blowing the nose starts it afresh."

CINA.

PATHOLOGICAL INDICATIONS.—Pruritus of nose, with helminthiasis.

CLINICAL.—Itchiness of the nose. Children pick constantly the nose, sleep interrupted, are peevish and restless at night, wet the bed, start in sleep, etc., with other symptoms of helminthiasis.

(*To be continued.*)

THREE CASES OF GLAUCOMA.

BY CHAS. C. BOYLE, M.D., NEW YORK CITY.

The first two cases are interesting, because in both the progress of the disease was checked, and sight restored to almost perfect vision; and as far as I know, there was no return of the trouble. This was accomplished by medicinal treatment instead of resorting to operative measures.

The first case was that of a lady, aged fifty-four, who for six months had noticed a gradual failure of sight with colors before the eyes, and accompanied by some pain in the temples and through the eyes. The tension was +2 in both eyes, and pupils dilated, especially the right. The right optic disc was cupped; the left normal, showing that the disease had probably been of longer duration or more severe in the right than in the left. R.V.=$\frac{20}{50}$, L.V.=$\frac{20}{30}$ diff. In this case I certainly thought that it would be necessary to operate, especially the right eye, and so told the patient, but advised trying remedies for a day or two. She was accordingly given Gelsemium 1st dilution on tablets internally, and Eserine sol. 1–200 externally every two or three hours. The following day her vision was improved, R.V.=$\frac{20}{40}$, L.V.=$\frac{20}{30}$; the eyes felt better and the tension was less, +1 in right eye and + in left. ℞, same. From this time, improvement gradually went on, until the seventh day, when the tension was about normal, and vision was $\frac{20}{20}$ in both eyes, the left being the clearer.

The second case was somewhat similar to the first, although not quite so severe. I was very apprehensive of bad results, as her father had lost one eye from glaucoma, notwithstanding an iridectomy had been made. The lady had always been near-sighted, but never complained of her eyes otherwise, until about three months previous to my seeing her, when she commenced to

have pains around the eyes, especially the left, with at times what she called "blind spells." The latter were supposed to be due to intermittent fever which she had at that time. With glasses her vision was, R.V.$=\frac{20}{50}$, L.V.$=\frac{20}{50}$. The right optic nerve was normal, but the left was slightly cupped, with vessels displaced toward nasal side. The tension was + in the right eye and + 1 in the left. ℞, Gelsemium 1st internally, Eserine 1–200 sol. externally. This case was slower than the first. She would have recurrence of the "blind spells," when the vision would not be as good. But the progress of the disease was checked from the beginning of treatment, and in a month's time the vision, with glasses, was $\frac{20}{20}$ with difficulty, the right being the better. The tension was normal, but her left optic nerve remained cupped. She has been under observation now for over six months, and has had no return of symptoms.

In cases of this nature, Gelsemium undoubtedly acts by checking hypersecretion of the intraocular fluids, and also by promoting absorption. But we must not give the credit alone to Gelsemium, as Eserine is a powerful ally in these cases; the benefit being derived from its action on the ciliary muscles, causing a diminution in the diameter of the lens, and the withdrawal of the periphery of the iris from the iritic angle; thereby allowing excretion to take place more freely through filtration passages.

The third case differs from the foregoing, but it presents some interesting points. When the patient was first seen he was suffering from an iritis of the right eye of two or three weeks' standing. There was complete adhesion of pupillary edge of iris, and considerable pain. The tension was +, showing the presence of secondary glaucoma. Sight had been lost in the eye some years previously. From the history I should judge it had been lost from intra-ocular hæmorrhage. Notwithstanding the increased tension, I deemed it advisable to use atropine for a day, to see if the adhesions of the iris could be torn and pupil dilated. This was not successful, and as the pain and tension increased, I stopped atropine, and used eserine 1–400 externally, which relieved for a time, with periods of exacerbation. As there was very little relief from pain, I deemed it advisable to operate. (If there had been any sight in eye should have operated in the

beginning.) It seemed to me that this was a case for sclerotomy, which I performed, but with only temporary relief. The patient remained about the same for two months, when I decided to perform an iridectomy, which was accomplished with considerable difficulty on account of the adhesions of the iris. This did not afford any relief. I found that the lens was cataractous and pressed well forward, which accounted for the continuation of the increased tension after the operations. Shortly after this I was summoned to see him on account of the intense pain he had, severer than ever. I told him it would probably be necessary to have the eye removed, before he could obtain much relief. As he objected to this, I thought I would make a sclerotomy back of the ciliary body, and in front of the equator of the eyeball, as it appeared to me that it was just such cases as this in which it ought to be serviceable. After using cocaine, which produced very little anæsthesia, I took a narrow Von Graefe cataract knife and made an opening in the sclera at the inner and lower quadrant of the ball between the ciliary body and equator; the incision being about three millimetres in length. On removing the knife there was a slight watery exudation. The next day the tension was about normal. From that time until now the patient has experienced more relief than before, no pain, and the redness has almost disappeared from the eye. The tension is still a little plus, but he suffers no inconvenience from it. Since the operation he has been using eserine 1–400, which has been used off and on from the beginning of his trouble.

INTERESTING CASES OF EPIPHORA.

BY SAYER HASBROUCK, M.D., PROVIDENCE, R. I.

I call the following cases interesting on the ground that they are from causes not of frequent occurrence, rather than from a belief that they are cases of unusual rarity.

CASE I.—Mrs. C——, aged thirty-five. She said that for some time the inner corner of her eyelid had been swollen and red ; the tears had run over constantly, and it was impossible for her to use it with comfort. On examination I found a large meibomian cyst just below the canaliculus, the contents of which I could easily evacuate by pressure, the opening being into the canaliculus. From the puncta there protruded for fully an eighth of an inch a polypoid-like growth. This condition had existed for fully a month, and for nearly a year there had been a bunch there. I removed the growth with the forceps, opened the cyst freely from the inner surface of the lid, and thoroughly scraped and cleansed the cavity. This was followed by daily probing of the canaliculus, as I was afraid that it might close, as I have seen cases of obstruction of the canaliculus evidently due to the breaking down of cysts in this locality ; but we succeeded in keeping this open, and the eye has given no further discomfort.

To me the case was an unique one, as it evidently began as a simple meibomian cyst which was allowed to take its course, finally breaking down and discharging into the canaliculus. As it did not heal readily there sprang up granulations which extended into the canaliculus, appearing at the puncta as described.

CASE II.—Mr. G——, aged fifty-five. He stated that he was troubled with a constant watering of the eye which had lasted for some three or four weeks. As is my habit in all these cases

I made firm pressure over the sac to see whether there was any trouble there, but instead of mucus coming from the puncta there appeared a dark hair, that previous to the pressure had been entirely concealed in the canal.

On removing it with the forceps it proved to be two ciliæ matted together.

I have previously seen a cilia part way in the canal, but never out of sight and the cause of two or three weeks' trouble. While speaking of irritation caused by the ciliæ I am prompted to call attention to a class of cases that has but recently attracted my attention, and as I believe it is of quite common occurrence, it may help others out of trouble just as it did me.

A little girl some three or four years of age was brought to me complaining that her eye felt as though it was always crying. She was the perfect picture of health, and I failed to find any cause for the slightly irritated condition of the conjunctiva, even though I everted both lids. I assured the mother that it was nothing but a cold, and with a simple lotion would quickly improve. In about a week's time she reported the eye as no better, and then she asked me if I thought the eyelashes could be the cause ; of these the child had a most exuberant growth, but on carefully examining the edge of the lids I was unable to note any that seemed to touch the globe. As I reached the external angle of the lids, however, I found fully a half-dozen hairs matted together and curled under the lid ; at the first visit I had overlooked these, though it is true that I everted the lids, but in so doing I had pulled the ciliæ from their hiding-place and thus missed them. I directed the mother to watch carefully and keep the lashes in their proper place, and in a short time there was no further trouble complained of.

Within a short time after seeing this first case, I discovered another that in every way was as difficult of explanation as the former one, but it proved to be the same. The irritation complained of is but slight, hardly enough to attract attention, still I am sure the little ones find it anything but comfortable, and if we can find the cause and relieve the symptoms it is much better than saying, "Oh! it is just a little cold and will be all right soon."

RED CLOVER IN GLIOMA OF THE RETINA.

BY GEO. S. NORTON, M.D.

My attention was first called to the value of the extract of Red Clover in glioma of the retina, by the report of a case by Dr. H. C. French of San Francisco, Cal., in the *Transactions of the American Institute of Homœopathy* for 1884; and as I believe that any information concerning a drug, which may be of service in curing or preventing the recurrence of this usually fatal disease, will be welcomed by my professional brethren, I take pleasure in presenting the subject for their consideration.

As an introduction to my own experience the case reported by Dr. French will be given in detail. It was as follows:

Eva N—— was first seen by me when eighteen months old. About four months previous, her right eye had attracted the attention of her attendants by the size of the pupil and its peculiar yellow reflex. She was subject to periodical attacks of crying and restlessness indicative of pain in the head, the pain alternating with extreme drowsiness; the right side of the head being constantly hotter than the left. About two months previous to her application for treatment, the pain became almost constant and had so impaired her general health as to render preliminary treatment a prudential condition of enucleation, which had been advised and assented to by the parents. At the first examination a grayish-yellow tumor was plainly visible to the naked eye, protruding from the ciliary region of the temporal side, but not yet past the line of the optic axis, and the outlines of the normal retina of the nasal side were still visible under the ophthalmoscope, although the tension was already palpably increased.

During the eight weeks following, the tumor steadily increased in size, encroaching upon the lens, which with the iris was pushed forward and to the nasal side, until the anterior-chamber became almost obliterated, and a grayish-yellow, vascular, somewhat nodulated mass appeared, filling the pupillary space, and crowding the now discolored iris almost forward to the posterior surface of the cornea. This was the condition of the eye at the time of its removal, about two months subsequent to the first examination. I performed the enucleation October 5, 1881, and found the tumor enveloped in the detached retina, and attached in front to the nasal region of the ora serrata, and posteriorly to the optic nerve.

Great care was exercised to establish the pathological identity of the growth, and fresh as well as hardened portions of the tumor presented under the microscope the characteristic gliomatous cell formation. The optic nerve was somewhat discolored at the point of excision. The history of the case during the six days following enucleation was ominous for the future of the patient. The stump discharged constantly an ichorous, excoriating, and sanguinolent fluid, and on the third day unhealthy granulations made their appearance in the center of the stump. The child gave evidence of almost constant pain in the head, which was very hot.

On the fourth day I commenced packing the orbit with absorbent cotton saturated with a strong solution of the Red clover; at the same time administering it internally, at intervals of two hours, in teaspoonful doses, a solution composed of twenty drops of the fluid extract to half a glass of water. The local application at first produced some irritation and smarting, which, however, speedily subsided. Within the next twenty-four hours there was a decided change for the better in the character of the discharge, which was changed to healthy pus, and so continued till the stump was soundly healed. On the sixth day the child was profusely salivated, and having taken no other remedy than the Clover it was attributed to that and its use discontinued in any form, when the ptyalism was promptly relieved. Twenty-four hours later it was renewed in reduced strength, and continued with no unpleasant effects until the discharge ceased entirely which was about six weeks after the operation. At this writing, though nearly two years have elapsed since the removal of the eye,

there is not the least sign of a recurrence of the disease, and the child is a model of physical health.

My own case was as follows:

Florence M——, three and a half years, was sent to me July 6, 1887, by Dr. McLenathan of Brooklyn. Questioning elicited the following history: The parents had noticed that the child had seemed to be blind in the right eye for several months, and two months previous to my seeing her the pupils had begun to appear white and the child began to fail in her general health. She had become thin and pale, lost her appetite, and instead of being bright and cheerful, as formerly, had been irritable, peevish, and cross. Upon examination I immediately noticed the yellow-white reflex from the pupil so characteristic of glioma. The pupil was moderately dilated, the ciliary vessels were engorged, and the tension was markedly increased. The child complained of pain in the eye and head. With the ophthalmoscope a yellow-white, mottled, nodular tumor could be easily detected at one side of the fundus just behind the pupil. The remainder of the fundus was filled with the detached infiltrated retina, so that no red reflex could be obtained. Enucleation was immediately advised and consented to. The same afternoon she was taken into the New York Ophthalmic Hospital, ether administered, and the eyeball removed. The optic nerve was divided a short distance behind the eyeball, but not as far as I intended, as the operation was performed hurriedly, owing to the failure of the child to take the anæsthetic well. The cut end of the optic nerve appeared healthy.

Examination of the globe showed a small gliomatous tumor about the size of a pea in the retina just behind the ciliary body, while the remainder of the retina was wholly detached and infiltrated, thickened here and there.

The child made a rapid recovery and the socket seemed healthy. The general health also began to improve. This continued until about Sept. 1, when she again commenced to show the previous symptoms of constitutional disturbance, and a small tumor could be seen growing from the divided end of the optic nerve. This increased steadily in size for three weeks, when it was more than a quarter of an inch in diameter. I then determined to remove all the contents of the orbit as thoroughly as possible. With this

end in view ether was administered on Sept. 22. It was soon found that total anæsthesia could not with safety be produced and continued, for as soon as this stage was nearly reached the breathing would stop and heart cease beating. After two or three unsuccessful attempts to produce anæsthesia, I seized the end of the optic nerve and tumor with a pair of fixation forceps, and rapidly, with scissors, cut off the end of the nerve with as much of the surrounding cellular tissue as I could, while the child was held by my assistants. Examination of the socket showed that only a small proportion of the contents had been removed, but no further attempt was considered advisable on account of the weak condition of the patient. A very unfavorable prognosis was made, and the parents were warned that in all probability the disease would return and the child die in a few months.

The parents, however, having heard of the virtue of Red Clover in cancer, suggested its trial. I, remembering the case reported by Dr. French, at once indorsed the treatment. Needham's fluid extract of Red Clover blossoms was procured, and a small coffee-spoonful given three times a day. Indications of improvement in her general condition soon could be detected; her appetite improved, a more healthy color of skin became apparent; she lost her former symptoms of malaise and began to play with other children. The remedy was continued in the above strength for two or three months and then gradually reduced to one small spoonful once a day. This amount was taken for nearly one year, and afterwards off and on for another year. When last seen, Oct. 22, 1889, the child appeared perfectly well in all respects, and a more healthy socket I never saw, no congestion or mucopurulent secretion whatever. I then allowed the introduction of an artificial eye, which had not before been permitted. The left eye had not been involved at any time, and the vision was $\frac{15}{15}$.

Even as "one swallow does not make summer," so these cases alone by no means establish Red Clover as a specific for glioma of the retina, but they certainly suggest the inference that it may be of value in preventing the recurrence of this terrible disease. During the past twenty years I have seen several cases of this malignant disease, and so far as I now remember, every one with the above exception has recurred after enucleation, and death has been the final

termination. Of course, no one would, for a moment, think of treating a case of glioma by internal medication without enucleation. Removal of the eye must ever be the first measure adopted in the treatment, but the known frequency of return renders the suggestion of any remedy that will prevent this return welcome to the specialist. We trust the profession will give the Red Clover a thorough trial in glioma of the retina, and report the results.

A RÉSUMÉ OF THE TRANSACTIONS OF THE OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM, VOLUME IX., SESSION 1888–9.

BY CHAS. DEADY, M.D.

The subject for the Bowman Lecture of this session is "On the Value of Eye Symptoms in the Localization of Cerebral Disease," the lecture being delivered by Henry R. Swanzy, A.M., M.B., F.R.C.S.I.

Of derangements of associated movements of the eyes, the commonest form from cortical lesions is conjugate lateral deviation—*i.e.*, abnormal function of the internal rectus of one eye, and of the external rectus of the other.

In paralysis, the deviation is toward the side of the lesion in the brain and away from the side of the hemiplegia; in spasm, opposite.

Similar conditions may proceed from a lesion of the internal capsule.

Same may be caused by a lesion of the pons, involving special nucleus for the associated motion, which probably resides in the superior olivary body; but when symptom comes from lesion of pons we have an opposite condition from that when lesion is in cortex or internal capsule—viz., in pontine lesions the deviation is away from the side of the brain lesion in paralysis, and toward the side of the lesion in spasm.

According to Gowers we have variation in symptom depending on whether disease does or does not involve the nucleus of the sixth nerve. If it does, the power of the external rectus is completely lost, and the eye is turned in; the opposite eye can turn in to the median line only.

If the lesion does not immediately involve the nucleus, but is at or in the neighborhood of the superior olivary body, the eyes cannot be moved toward the side of the

lesion beyond the middle line; here convergence may sometimes be effected.

If the fibres of the sixth nerve in the pons, after leaving their nucleus, be injured, the rectus externus is paralyzed, but the associated rectus internus of the other eye is not impaired.

Conjugate deviations due to pontine lesions are usually direct symptoms; those due to cortical or capsular lesions are indirect or distant symptoms.

Where both the nuclear centers for associated movement are paralyzed, the eyes look straight forward; no lateral motion is possible, while up and down movement is perfect.

Loss of motion of the eyes upward has been observed in disease of the corpora quadrigemina.

Paralysis of the upward and downward motion of both eyes, with unimpaired lateral motion, many result from a focal lesion involving the third nerve nuclei in the floor of the Sylvian aqueduct.

Loss of power of convergence is a symptom of lesion of posterior quadrigeminal bodies; occasionally the symptom is indirect.

Deviation of one eye downward and outward, and of its fellow upward and inward, has only been seen with lesion of the middle cerebellar peduncle.

Ptosis, partial or complete, may be a focal symptom in cortical lesions without any other branch of third nerve being affected. It is very probable that a separate cortical center for this branch of the third nerve exists to supply the muscle of the opposite side.

Monolateral ptosis does not aid in deciding the location of lesions in the cortex, but the symptom is of value in the fact that it occurs as the only focal symptom, solely in cortical lesions.

Double ptosis was the only focal symptom in a case of tubercular degeneration of the corpora quadrigemina.

Lesions causing bilateral paralysis of branches of the third nerve, which are normally innervated together, as of motion upward, downward, or in convergence, or double ptosis, are to be sought for in the quadrigeminal bodies.

Ptosis on the side of the lesion has occasionally formed a symptom in disease of the pons, without paralysis of other branches of the third nerve.

In lesions of the crus cerebri, the third nerve is usually paralyzed as a whole, but where only a single branch is affected it is most commonly that supplying the levator palpebræ; hence ptosis as a factor in a crossed paralysis may help to indicate the crus as the seat of the lesion.

Crossed hemiplegia with paralysis of all or part of the third nerve on the side of the lesion and hemiplegia on the opposite side of the body, is a sign of disease of the crus cerebri if paralysis on both sides occurs simultaneously; otherwise not, except in rare cases.

Paralysis of the fourth nerve alone has been seen as the result of tumor of the pineal gland, but it is more apt to result from a basal lesion. In combination with paralysis of the third nerve, it speaks for a lesion of the cerebral peduncle extending back to the valve of Vieussens.

Paralysis of the sixth nerve alone is either due to disease of the base or it is a distant symptom. The lengthened course of these nerves over the pons is probably the reason why they are so extremely likely to be indirectly affected.

Paralysis of the sixth nerve simultaneous in its onset with hemiplegia of the opposite side of the body indicates a lesion of the pons on the side of the paralyzed nerve; with this may also occur paralysis of the facial.

Lagophthalmos, with crossed hemiplegia, is apt to occur in a lesion of the lower part of the pons, but if the lesion be in the upper part of the pons the hemiplegia and lagophthalmos will be homonymous.

Crossed paralysis of the fifth nerve also indicates a lesion of the pons; here, however, neuro-paralytic ophthalmia is rare, while if the lesion be basal the corneal affection is the rule.

Loss of the pupillary reflex to light, apart from paralysis of the third nerve, is a sign of lesion of the anterior quadrigeminal bodies or the optic tracts, and may be used to distinguish these lesions from others, causing loss of sight by implicating both visual paths beyond the corpora quadri-

gemina, or both visual centers, as in the latter, notwithstanding the blindness, the pupil-reflex is maintained.

In hemianopsia also, the pupil-reflex will differentiate between lesion of the optic tract and one further on in the visual path,—if the pupil contracts actively to light thrown on the blind side of the field the lesion cannot be in the tract; if there is no reaction, it must be in the tract.

Homonymous lateral hemianopsia extending up to the vertical dividing line of the field, and involving the field for color, light and form, may be caused by a lesion in the cerebral cortex, or anywhere in the visual tract between the cortex and the chiasm; the concomitant symptoms may enable us to decide the precise location.

We cannot distinguish clinically between an absolute hemianopsia due to a lesion confined to the absolute visual center, from one due to a lesion involving at the same time other parts of the occipital cortex.

We may conclude that the hemianopsia depends upon an occipital lesion, if it be unaccompanied by hemiplegia, motor aphasia, or paralysis of cerebral nerves as direct symptoms, but one or all of these may accompany lesion of the occipital lobe as distant symptoms.

Without doubt the centers for the color, form, and light senses are all present in the occipital lobe and posterior end of the occipito-temporal convolutions, and it is probable that they are either arranged in layers one over the other in the cortex or are placed side by side. Verrey thinks the color sense occupies the most inferior part of the occipital lobe and probably the posterior part of the lingual and fusiform convolutions of the temporal lobe; the light-sense being more toward the superior part of the occipital lobe, with the center for form-sense between the two.

Relative hemianopsia, *i.e.*, that form which does not include all of the three senses, can only occur with lesions of the cortex. Hemianopsia from lesions elsewhere must always include all the visual perceptions. Those cases of hemianopsia, also, with some peripheral contraction of the other side of the field, are due to cortical lesions.

Hemianopsia from a lesion in the optic radiations will

often be indistinguishable from the same symptom due to a lesion in the cortex. The defect may be complete or incomplete, involving all or only a part of the radiating fibres. Pronounced distant symptoms, such as hemiplegia, hemianæsthesia, ptosis, etc., are more apt to result from a lesion here than in the cortex.

A lesion in the posterior third of the posterior limb of the internal capsule—the sensory crossway—is likely to produce complete hemianopsia, because the nerve-fibres are here collected together in a small space. Hemianæsthesia will be present as an accompanying direct symptom, and also, sometimes, loss of the other special senses on the opposite side from the lesion; and, should the disease extend forward to the anterior part of the posterior limb, hemiplegia will be added as a direct symptom. If the lesion be on the left side, motor aphasia may be present.

In hemianopsia due to lesion of the optic tract, the defect in the field is usually complete; the characteristic pupillary reflex before spoken of will enable us to locate a lesion in the tract.

Total blindness of both eyes appearing as a focal symptom, apart from cases of double cortical hemianopsia, or of cortical hemianopsia combined with a lesion of the opposite optic tract, can only be due to a lesion involving the whole of the chiasm, or both optic tracts.

Visual aura have been noted as a symptom of disease of the occipital lobe.

Reports a case in which hemiachromatopsia is associated with mind blindness, or the loss of the power of recognizing faces or objects long familiar, or of recalling their appearance when absent from them, and is inclined from this and other available data to localize visual memory very close to the centre for vision, probably in the occipito-parietal lobe.

Alexia, or the loss of the power of understanding printed or written speech-symbols, has occurred in combination with right hemianopsia in many instances. The center for visual speech-symbols being localized in the left angular gyrus, the coincidence of the two conditions may be

explained by the proximity of the center of vision to the angular gyrus.

In crossed amblyopia, in which the eye opposite to the side of the cerebral lesion is almost blind, with very contracted field, while the field of the other eye is also contracted, but in a lesser degree, the lesion has been found in the lower and hinder part of the inferior parietal lobule.

Mr. Wm. Lang records a case of traumatic enophthalmos with retention of perfect vision. Patient was struck in right eyebrow by the shaft of a cart; after subsidence of the acute symptoms it was seen that the eye was sunken in the orbit so that it looked like a small artificial eye. The palpebral fissure was 4 mm. shorter and 4 mm. narrower vertically than the left.

Motion of the eye was limited in every direction, with consequent diplopia. The globe was displaced slightly downward, and the right cornea was 8 mm. behind the level of the left. The bones of the orbit were apparently normal, as were the teeth.

Simeon Snell reports two cases of adenoma of the lachrymal gland, in which the tumor was removed by incising the external commissure, turning the upper lid up and operating through the conjunctiva. The larger tumor was 1½ by 1¼ inch in size, and when *in situ* reached nearly to the back of the orbit. It was enveloped in cellular tissue but not attached to bone.

The eyeball was pressed downward and markedly protruded. The tumor appearing under the upper lid, at its outer half; it was hard and firm feeling and without pain, fluctuation or tenderness. The movements of the ball were not interfered with except by the above-mentioned deviation. The lids closed over the globe, and neither vision nor the lachrymal secretion were affected.

A case of deep suppurating hydatid of the orbit is described by W. C. Rockliffe, M.D. Patient, æt. thirty-three, laborer; left eye commenced to protrude seven years ago, with attacks of inflammation and dimness of vision.

When first seen, April, 1887, symptoms as follows: No perception of light, media clear, N. O. pale; veins full; ptosis, and the action of all the ocular muscles very limited, except external rectus; pupil normal size. Anterior chamber shallow. Tension normal. The eye about three-quarters of an inch more prominent than its fellow. No fluctuation, bruit, or pulsation. Eighteen months later, decided increase of proptosis, complete ectropion of lower lid, and much œdema of its conjunctiva, together with that of the lower half of the eyeball.

A cystic tumor being suspected, a scalpel was passed through conjunctiva between floor of orbit and eyeball and carried backward and inward across the floor, but nothing but blood escaped.

Under ether the external canthus was freely divided, including the ocular conjunctiva. On passing the finger deeply within the orbit a firm, somewhat solid resistance was felt behind the eyeball, resembling a solid growth. After removing the eye an incision was made parallel to the infra-orbital ridge and the finger passed along the floor of the orbit to its apex; at about two-thirds of the distance a quantity of fœtid pus escaped, followed by hydatid membrane and much débris, leaving a large cavity which filled the apex of the orbit and appeared to surround the optic nerve.

Probably the repeated (eight) inflammatory attacks were caused by the rupture of a daughter cyst, or suppuration.

Cavernous Angioma of the Orbit.—By A. Emrys-Jones, M.D. Female, æt. eighteen. When nine years old left eye began to bulge, gradually increasing ever since.

Status præsens:—The globe is protruded straight forward 1½ inch, by an elastic tumor which envelops it on all sides under conjunctiva. Globe cannot be pushed back to normal position. No pulsation, no fluctuation. Tumor entirely fills space between globe and orbital wall, ceasing abruptly at reflection of conjunctiva. Motion upward, inward, and outward limited; motion downward impossible.

Pupil reacts to light and consensually with fellow. Optic

nerve pale, margins blurred, and retinal veins tortuous. Field normal. V=14 J.

Eye was removed and growth dislodged with handle of knife and fingers, coming away complete in what appears to be a distinct capsule. Very little hæmorrhage.

Tumor was in shape a triangular cone with apex to apex of orbit. Optic nerve was partly embedded. Surface of growth was smooth and of a reddish-purple hue. Measurements 8 cm. by 7 cm. by 5 cm. Microscopic examination shows an open framework of fibrous tissue with numerous round, sinuous, and irregular cavities filled with blood-corpuscles. There is no separable capsule, but instead a condensation of the fibrous framework. No recurrence.

A rare case of pulsating exophthalmos is presented by Adolf Bronner, M.D.

Patient a healthy farmer, æt. sixty-six. When only one year old he fell, his head striking a stone, and says, "his right eye was knocked out on his cheek" (protrusion seems therefore to have been noticed at once). Ever since the eye has pulsated and protruded sufficiently to prevent closure of lids. Protrusion increased by mental or bodily excitement or by drinking or smoking freely. Health always good, never had any pain or noises in the head. Occasional sharp pain though eyeball. Has been a great boxer and wrestler, and has drank beer and spirits freely.

When seen in 1886 the right orbit was decidedly larger than the left, measuring 6 cm. vertically between margins. Lids normal size and freely movable. Eyeball dislocated forward, downward and outward, nearly on a line with the bridge of the nose, hanging, as it were, out of the lower and outer margin of the orbit, into which it could easily be returned, by pressure. Eyeball pulsated synchronously with arterial pulse. Cornea and iris normal, pupil slightly larger than fellow, and acted very slowly to light and not at all to accommodation. Motion of ball very limited in all directions. No strabismus. V= $\frac{6}{18}$; Hm.=1.50 D. V= $\frac{6}{9}$; with +8 D. = 1 J. Has never had diplopia. Mediæ and fundus normal, except slight lenticular striæ. Slight pulsation of

retinal veins, much increased by pressure on globe or jugular vein of same side, and diminished by pressure on carotid.

With stethoscope on or near eyeball a not very loud but distinctly continuous roaring bruit is heard, more marked during systole; bruit nearly ceased on pressure on carotid.

Later on the patient was very ill for some weeks, during which time the protrusion decreased so that lids could be closed; a year later the eye sank still further into orbit and turned inward. At present, patient is healthy, has no headaches, and hears no noises. The orbit is enlarged, and lids closed and fallen in. On opening lids eye is seen lying back in orbit about 2 cm. behind the closed lids. Eyeball pulsates with arterial pulse. Convergent strabismus, but eye can be turned outward to median line, which is the only motion possible. Fundus and media normal. Vision good as ever. A very faint bruit is heard on right temple. If patient excites himself, bends his head down, or blows his nose, the eyeball comes forward, sometimes far enough to be level with left eye.

Bronner considers case to be one of arterio-venous communication between the internal carotid and cavernous sinus, of traumatic origin. The continuous bruit, the fact that eye can fall back so readily and so far, and the absence of past or present papillitis prove this.

The earliest case previously on record of traumatic origin was in a child of ten.

L. Werner details a case of sub-conjunctival cysticercus in a lad, aged seven, from Ireland. Patient stout and healthy. When looking straight forward nothing noticeable but slight swelling of lower lid; on depressing lid a smooth, ovoid, semi-translucent tumor appears. It is about the size of a large pea, pale reddish-yellow in color, evidently contains fluid, and is not very sensitive. It is freely movable between conjunctiva and sclerotic for 5 or 6 mm. in every direction. It measures 8 mm. by 10 mm.

Numerous vessels run over surface of cyst, some of which belong to conjunctiva and move with it; others are deeper, are immovable, and belong to cyst wall. Except where

covering cyst, conjunctiva is free from congestion. By oblique illumination a small opaque, yellowish-white circular spot is visible near the center of the anterior surface, casting a shadow in the interior of the sac. Conjunctiva over it was slit, and tumor easily removed. It contained a clear fluid, without cellular elements. Wall of sac, which was firm and about 1 mm. in thickness, presented vascular outer surface, while inner lining was smooth, white, and shining, as if lined with endothelium.

Lying loose within the cyst was a delicate white vesicle, measuring 6.5 mm. in diameter, and presenting in its interior an opaque white club-shaped body, which was attached to the cyst wall at its narrow extremity.

The vesicle was teased with needles, and under the microscope proved to be the head and neck of a bladder-worm. The head possessed four suckers and a circle of thirty hooks, followed by a wrinkled neck, sprinkled over with the usual calcareous corpuscles.

Tertiary Syphilitic Ulceration of Conjunctiva.—By J. B. Lawford. Male patient, æt. twenty-three, with history of chancre followed by suppurating bubo eight years ago; no venereal disease since then. Right eye—caruncle and semilunar fold swollen and red; at lower extremity of latter is a ragged ulcer with yellowish slough the size of a split pea; no pain, tenderness, or surrounding infiltration. Cornea and iris normal. No enlarged gland in parotid or submaxillary region; has had sore throat for three months. Fauces slightly swollen and deeply congested. No ulceration. One month later ulcer much larger, with induration around it; surface covered with yellowish slough. No enlarged glands. Now has perforating ulcer of soft palate and another ulcer in right tonsil. Iodide of potass. cured case rapidly.

Case of Monocular Suppurative (?) Iritis.—Reported by W. C. Rockliffe, M.D. Patient a well-nourished, healthy child, æt. eight; personal and family history excellent; no history of injury of any kind. Had suffered acute pain in right

eye for a week; eye much inflamed, but no lachrymation or photophobia. On examination; left eye, normal. Right eye—ocular conjunctiva generally injected, also deep injection, with pink zone. No hypopyon. Anterior chamber shallow, the iris completely adherent, and throughout its entire circle had a nodulated appearance. The nodules, varying in size from a pin's point to a millet-seed, were situated not on the surface, but in the tissue of the iris, some of the larger ones reaching almost to the posterior surface of the cornea; the summit of each nodule was yellow and cheesy looking.

The color of the iris (normally brown) in the sulci between the nodules, was almost black, and running in between the prominences was a single bright scarlet vessel, these together forming an arterial network, in the meshes of which sprang the nodules.

The pupil measured 2 mm., and was bordered by a ring of yellowish lymph, which spread over the anterior capsule of the lens as a gray film. Tension +1; eyeball not particularly tender, cornea clear. In seven days, under treatment, all pain gone.

Aug. 7, three weeks later. Nodules appear larger and closer together; ciliary staphyloma commencing above and to the inner side. T+1 (?), more ciliary congestion.

September 10.—Both ciliary staphyloma much increased, tension diminished, less injection, iris atrophying.

Oct. 4.—Ant. chamber obliterated; staphyloma decreasing. T −1.

Nov. 13.—Ball shrinking, slightly tender. T −2, no pain. Only blue mark where staphylomata were. Injection much less. General thinning and atrophy of iris. Eye was excised later.

Under microscope an inflammatory new growth is formed on the internal aspect of the ciliary body in close relation with its folds and pigment layer, and in the iris, especially at its base.

Case considered by Dr. Brailey (who made microscopic examination) to be one of irido-cyclo-choroiditis of a pecu-

liar nature, showing many of the qualities of the inflammation produced by sympathetic disease.

Arthur H. Benson reports a case of transparent cyst of iris in a farmer, æt. twenty; first noticed about one year ago, when growth lasted a month and then disappeared and was not visible for several months, when it returned and grew rapidly.

Status præsens.—About three-quarters of anterior chamber of left eye occupied by an almost perfectly transparent body with a sharply defined edge, with an indentation near the middle of the inferior border. So clear and sharp-edged was it that at first it suggested a dislocated lens. It accurately filled the upper half of the anterior chamber, fitting into the iritic angle, and slightly pressing backward the root of the iris in this situation. The remainder of its periphery was free in the aqueous, and though fairly uniform it had, as before mentioned, an indentation about the middle which seemed more or less to divide it into two lobules.

The posterior surface of the cyst seemed to be in contact with the iris, which appeared to be changed in texture, and in places the pigment layer was so thinned that the red reflex from the fundus could be obtained in two places near the periphery. The lower portion of the iris, of the pupil, and of the anterior chamber were normal in appearance and action. The deeper parts of the eye were all normal. Tension normal. Vision $\frac{6}{60}$, not improved by glasses.

An incision was made with the keratome, the cyst ruptured, and the cyst-wall and iris adherent to it were removed. Patient made good recovery. Vision with proper glasses$=\frac{6}{24}$.

A case is presented by J. Hutchinson, Jr., in which a peculiar form of retino-choroiditis resulted from a concussion of the eye. Patient was struck in the eye by a stone, probably over the closed lid, as there was no injury to cornea or sclera. There was traumatic mydriasis and loss of accommodation, some opacity of posterior pole of lens, and slight opacity of vitreous. The disc was of good color;

just outside it and extending to and around the macular region were a great number of spots of various sizes and brownish black in color; similar but much finer changes were seen in patches above, below, and to the inner side of the disc; periphery of fundus normal. The pigment spots had no definite grouping with regard to the retinal vessels, and did not overlay them in any part. As a rule they were round or oval in shape, though often somewhat irregular. Vision of affected eye was $\frac{1}{60}$. In one month, vision improved to $\frac{1}{36}$, the pigmentation becoming more sharply defined and blacker in hue. Eight months later there was pronounced atrophy of disc, and vision$=\frac{6}{48}$; field greatly narrowed both for white and colors.

W. Edmunds and J. B. Lawford report the following ophthalmoscopic appearances in a fatal case of alcoholism: In each eye there is wide-spread, well marked haze and cloudiness of the retina, so that its arteries appear partially obscured, and the choroid is seen indistinctly. Retinal veins are large, but neither they nor the arteries are tortuous. No hæmorrhages or localized exudation, no bright spots. The disc is not appreciably swollen; the media are clear. The retinal haze extends peripherally as far as it is possible to examine. The appearances resemble those of syphilitic retinitis, but the haze is more widespread, and the retina is less gray than in that disease. Vision could not be accurately tested, but there was no gross defect, and patient made no complaint of his sight. There was no central color scotoma.

A case of recurrent transient blindness is reported by R. W. Doyne. Patient, æt. twenty-two, was in low state of health as a result of fever contracted in India. The first attack occurred in India; while reading, his right eye suddenly went blind, so that he could not distinguish the most brilliant light from darkness. In about ten minutes it began to clear from below upwards, and in five minutes sight was completely restored.

Shortly after landing in England, on Nov. 1, 1888, he again experienced quite suddenly the same sensation in his

right eye, and on testing it found it was again completely blind. An hour and a half afterward it began to clear, but on this occasion from above downward, contrary to the previous attack. In about five hours his vision cleared, but he could not read the paper then; but two days later, when Mr. Doyne saw him, vision was $\frac{6}{6}$ and 1 J. O. U. The movements of the pupils were normal, except that the right was very sluggish to the direct stimulation of light. The upper half of the right disc was very blurred, but the margin was manifest to indirect examination. The whole of the upper half of the fundus showed a thick, white fog, which completely veiled the choroid, but in which the retinal vessels stood out very brilliantly, in marked contrast to the white fog. Here and there they dipped slightly into the fog, but were never lost sight of. All the vessels were examined separately and carefully to their finest branches, which were much more manifest than usual. No plugging existed anywhere. The upper field was slightly contracted, the lower almost lost. Field in other eye normal.

On Nov. 17, the fog had quite disappeared. The upper half of disc margin was still somewhat blurred, especially around the emergence of the vessels. Just above the disc, but not extending far from it, the retina was stippled with dots of bright reflex. Nearly half of the lower field had been regained, but it was very irregular, and perception in it was much blunted. There was a completely blind area immediately below the fixation point, and beyond that area there was no color perception.

April 8, 1889.—Field remains same; the upper half of the disc is becoming white, and the ascending arteries are now, in contradistinction to the condition before observed, very narrow on the disc, but widen out and become fuller toward the periphery of the fundus.

J. Hutchinson, Jr., gives the history of a case of ulcerative endocarditis, in which the patient suddenly complained of loss of sight; could only count fingers. Ophthalmoscopic examination showed recent hæmorrhages in both retinæ, general haziness of fundi not more marked around the disc. The arteries could hardly be seen, especially in the right

eye; veins smaller than usual, irregular in calibre. No further changes observed until death, except increased haziness.

The post-mortem revealed, in addition to the cardiac changes, an aneurism about the size of a small walnut at the base of the brain, springing from the termination of the basilar artery and involving the anterior surface of both posterior cerebrals. The sac extended directly forward, flattening out the infundibulum, and hollowing and raising the optic commissure. There were small red hæmorrhages in both retinæ. Both optic nerves just before entering the eye presented a bulbous enlargement of a purplish color, which appeared to be due to hæmorrhage in the sheath. The pressure on the two optic nerves appeared to be symmetrical. The summary of the case is as follows:

1. Symmetrical and rather sudden failure of vision in a patient suffering with ulcerative endocarditis.
2. Presence of an aneurism pressing on the optic commissure and impeding the return of lymph from the globe and optic nerve.
3. Anæmia and œdema of the retina with a few hemorrhages.
4. Distension of the optic nerve sheath and intra-neural lymphatic spaces.
5. Slight retro-bulbar neuritis.

G. A. Berry, M.B., gives some of his results in testing for the difference between visual acuity as ascertained with Snellen's types (black on white) and that for the same letters printed gray on gray, as in the test introduced by Bjerrum, in cases of optic neuritis.

He finds, in the limited number of cases he has examined, that whereas in the double optic neuritis of cerebral disease the light difference perception, as shown by the two varieties of test types, is very nearly the same as in the normal eye, in retrobulbar neuritis, on the contrary, the disparity is very great.

In three cases of double neuritis with $V = \frac{20}{20}$ Snellen, the vision for Bjerrum's types was $\frac{20}{30}$, and in another case $V = \frac{20}{20}$? Snellen and $\frac{20}{30}$ Bjerrum.

In one case of retrobulbar neuritis of right eye, V = $\frac{20}{40}$ Snellen, $\frac{20}{100}$ Bjerrum. In another case, V = $\frac{20}{100}$ Snellen, $\frac{1}{200}$ Bjerrum.

A third case came with well-marked central color scotoma in one eye, and V= $\frac{20}{200}$ Snellen. A week later the scotoma was badly defined and vision had improved to $\frac{20}{50}$ Snellen, but with Bjerrum's types it was only $\frac{6}{200}$. There were no ophthalmoscopic changes.

MISCELLANEOUS NOTICES.

OBITUARY.—Since the publication of the last number of this journal, death has taken one of our most able specialists in laryngology, Dr. Charles L. Cleveland, of Cleveland, Ohio. Although a young man, he had acquired a high reputation as a successful teacher of materia medica, an accurate prescriber, an acute observer, and most effective writer. The readers of this journal will particularly feel his loss, as they miss the continuance of the series of articles upon the "Therapeutics of Diseases of the Nose and Throat," commenced in the January number.

DR. TERRY, who has had an extended experience in the treatment of Diseases of the Nose and Throat, both in New York and Havana, has consented to give the readers of this journal the therapeutics of these subjects in advance of a work which he now has in preparation for the press.

NEW YORK OPHTHALMIC HOSPITAL.—At the Commencement exercises, held on the evening of April 3, the following gentlemen received the degree of Oculi et Auris Chirurgus: Geo. A. Shepard, M.D., Bristol, Conn.; Frank L. Hoag, M.D., New York City; F. J. Newberry, M.D., Cedar Rapids, Iowa; Hugh Frank Fisher, M.D., Austin, Texas; J. F. McGuire, M.D., Alpena, Mich.; E. B. Witte, M.D., Trenton, N. J.; C. H. Strong, M.D., Decorah, Iowa.

IF any specialist in the eye, ear, or throat desires a competent physician to take his practice during the summer, the Editor can recommend a reliable man.

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DISLOCATION OF THE TRIANGULAR CARTILAGE, WITH AN OPERATION FOR ITS RELIEF.

BY W. A. DUNN, M.D., CHICAGO.

This condition, which is the result of external violence, is not often observed. It consists of a dislocation and separation of the triangular cartilage of the septum from the anterior superior surface of the vomer. It is the result of direct violence, as from blows or falls on the side of the nose.

The symptoms observed are similar to those of septal deviation or enchondromatous outgrowths of the septum, except that in the median line can be felt a perpendicular ridge which corresponds to the anterior superior border of the vomer, while in the narium, corresponding to the side in which the cartilage is forced, is found a large triangular projection, which may completely close the anterior nasal opening. The lower border of the projection is sharp and usually attached to the base of the nasal opening, so that it cannot be replaced by pressure.

The external angle of the projection is seen to extend to the tip of the nose, and corresponds with the external surface of the triangular cartilage. The triangular cartilage may project downward toward the nasal opening, quite even with the point of the nose, and thereby widen the columnæ of the nose. There may be an anterior stenosis on the side in which the projection takes place; while the opposite side of the nose is enlarged anteriorly.

The diagnosis from deviation of the septum and septal excrescences should be carefully made, as the treatment differs widely from the former troubles.

The following case will illustrate both the condition and the operation for its relief.

Charles L., aged twenty-nine, complains that for many years he has suffered with what he supposed was nasal catarrh, with occlusion of the right nasal fossa. He says when he was fourteen years old, that while boxing he was struck on the side of the nose with considerable violence, and ever since has suffered from occlusion of the right nasal opening. He did not complain much of nasal discharge, but was more annoyed by the inability to

FIG. I.

breathe through that side of the nose. There were no reflex symptoms nor aural complications.

On examination, the right nasal fossa was observed to be quite closed by a firm projection from the septum, while the opposite fossa was enlarged laterally and contained a sharp projection from the vomer. The nose was not appreciably flattened, as it was still supported by the deflected septum. The dislocated portion was fixed in the right nasal opening, and could not be replaced by pressure.

Figure I. shows the projection as observed before the operation.

The operation for the relief of this condition consists in a careful subcutaneous dissection of the dislocated portion of

the cartilage from its new attachment in the nasal fossa and of freshening the border of the vomer in the same manner, through the same opening, in order that the two surfaces may be again coapted.

A small-sized straight bistoury should be inserted at right angles to the border of the vomer, and the cartilage separated at its lower border in such a manner that the mucous membrane on neither surface is punctured except where the knife enters. This can be accomplished by in-

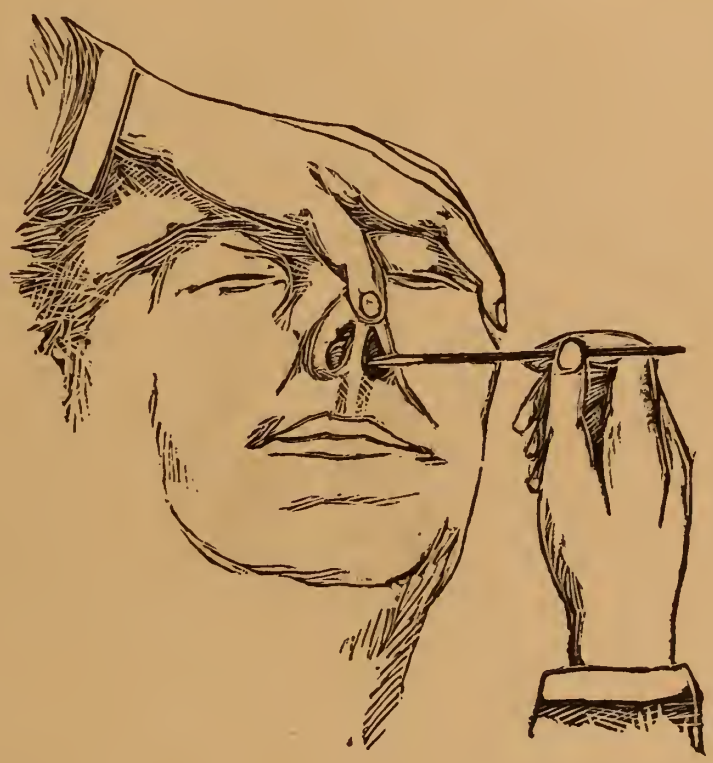

FIG. 2.

troducing the index finger in the opposite side of the nose and controlling the point of the knife by the sense of touch. When the cartilage is thoroughly loosened, the border of the vomer may be freshened in a similar manner without enlarging the internal opening. The cartilage is then returned to its place and held by plugs on the side from which the projection was taken, and, if necessary, pressure may be made by adhesive straps externally.

Figure II. illustrates position of the knife for separating the cartilaginous border.

The success of the operation depends largely on the proper application of the nasal plug. I used in the above case a medium-sized nasal bougie made of hard rubber, together with pledgets of jute, wrapped in antiseptic cotton in order to make them less irritating. The dilator, being cut the proper length, was introduced, after which the jute plugs were packed, externally, above and below, until the right side of the nose was well filled, and the deflected cartilage restored to its proper place. As an additional support, adhesive straps were applied externally in such manner as to make pressure on the plug, and thereby aid in keeping the nose straight. The plug remained *in situ* for five days, after which the naris was cleansed and replugged daily for several days.

The result was most satisfactory, as the nasal stenosis was entirely relieved and the septum was restored to its proper position.

Chloroform is essential in this operation because of the careful dissection and length of time required.

AMETROPIA AND NEUROSES.*

BY W. H. WINSLOW, M.D., PITTSBURGH, PA.

Every experienced oculist is familiar with the numerous reflex neuroses caused by errors of refraction in the eyes of man. The eye plan of the Creator is perfect, but the execution of it is often imperfect. A great many eyes are born bad. Again, an infant may have perfect eyes at birth, yet personal habits and the tyranny of the environment may distort and damage them greatly during development and growth. The eye is like a bag of water subject to modifications in form by intrinsic and extrinsic forces and variations in physiological and pathological activity. It is not strange then that we find abnormal and distorted eyes in many persons, and that we believe these organs, which are simply protected projections of the great cerebral mass, should be examined carefully by an expert oculist in every disorder of the nervous system.

Myopia, hyperopia, and astigmatism constitute the most of the cases of ametropia which come to us for relief and correction. Astigmatism may be acquired, but is generally congenital, and it often excites a train of morbid symptoms of considerable gravity. But it is generally when it is associated with hyperopia that we see the hydra-headed neuroses that puzzle practitioners and distress patients. Years of nervous suffering from eye strain are passed, and the eye symptoms, if noticed at all, are declared to be a consequence of disorder in some other part of the body. Headache, weight in the occiput, flashes of light, spots

* Read before the American Institute of Homœopathy, June, 1890.

before the eyes, and tenderness of the spine, are supposed to be from disorder of the stomach, liver, kidneys, uterus, or nerves, and treated accordingly, when all that the confiding patient needs is a pair of spectacles. I have seen during twenty years practice a great many serious disturbances of health from ametropia, including many kinds of headache, vertigo, neuralgia, photophobia, photopsies, clonic spasms, various congestions and inflammations of the ocular apparatus and the globes, defective vision, detachment of the retina, extra and intra-ocular hæmorrhage, burning and tenderness of the spine, nausea, vomiting, and even acute mania.

Much ill health, therefore, depends upon disturbances of nutrition and function by ametropia affecting the central nervous system, and the enlightened practitioner begins to recognize that a defective eye may cause a mighty disorder.

An illustrative case came to me last year, which is very exceptional, and I think deserves permanent record. A civil engineer brought his daughter because of inability to continue school on account of peculiar symptoms and pain when she used her eyes for near work.

The maiden, of twelve years, was healthy, well developed, and intelligent, and gave a good history of her trouble. One year before, she had suffered an attack of diphtheria and recovered perfectly, except that certain symptoms of blurring and weakness of sight for weeks after took her to an oculist of repute here, who examined the eyes under atropia, and prescribed for O. U. + .65 D. sph. for near work only. The eyes had continued troublesome, and new symptoms had appeared which were increasing in frequency and gravity. Whenever the eyes were used for near work a little while, a pain would commence in the two middle fingers of the right hand and extend soon to the adjacent fingers; the whole hand would then become numb and incapable of holding anything, or, as she expressed it, "she dropped things she tried to handle because she could not feel them." The pain would leave the hand with the advent of the numbness, advance along the forearm to the elbow, and leave it numb; then the right side of the tongue would become numb without any pain, and,

after this, the right side of the face below the eye experienced numbness without antecedent pain, and the internal rectus of the right eye would contract and turn the eye in three or four lines. Then, upon ceasing to use the eyes for near vision, the morbid symptoms would disappear entirely. The attack lasted generally about five minutes and left no subjective or objective symptoms. Of course, the near work was discontinued soon upon feeling the pain in the fingers, but the morbid manifestations would occur in the sequence described, and recur after the eyes had been used for near work again about half an hour, which made studying irksome and the patient discouraged.

The facial muscles, ocular apparatus and eyes, were normal in appearance and function; there was no paresis of sensation or motion in the parts; the arm was well developed and strong, and circulation, respiration, and other functions were normal. Rheumatism, hysteria, chorea, disease of the brain, and hereditary tendency were absolutely excluded by the evidence.

My first examination with the ophthalmoscope showed normal fundi, rather grayish disks, and emmetropia. Duboisia was instilled in each eye, and in half an hour the ophthalmoscope showed, R. E. H.=2.50 D. sph., L. E. H.=3.25 D. sph.

An examination with trial glasses previous to the use of duboisia gave, R. E. V.=$\frac{15}{15}$; with +.65 D^c. ax. 90° V. was improved. L. E. V.=$\frac{15}{20}$; with+.65 D^c. ax. 90° V. was $\frac{15}{15}$. Reading was .5 D. at "4 to 16."

I ordered atropia instilled twice a day for one week, then tested with glasses and found, R. E. V.=$\frac{15}{70}$; with + 2. D. sph. ⊂ + .65 D^c. ax. 90°=$\frac{15}{15}$. L. E. V.=$\frac{15}{70}$; with + 2.50 D. sph. ⊂ + .65 D^c. ax. 90°=$\frac{15}{15}$.

I gave Spigelia IX on pellets three times a day for two weeks, when I tested the eyes again and ordered for general use spectacles, R. E. + 1. D. sph. ⊂ +.65 D^c. ax. 90°; L. E. + 1.50 D. sph. ⊂ +.65 D^c. ax. 90°.

This combination was as strong as could be used comfortably and relieve the asthenopic and paretic phenomena completely. The child has used her eyes now for nearly a year and has had no return of the reflex neurosis. I conclude, therefore, that the ametropia was the cause of the neurosis.

I am aware that the administration of the medicine and

the rest favored by atropia vitiate the logical accuracy of my conclusion, but I cannot attribute a cure to the medicine in view of the large errors of refraction found. Refractive anomalies are so frequently causes of spasmodic action about the eyes, that one naturally looks for them immediately in every case without hunting for the similimum, and dallying with medicines. The first thing to do in all cases is expressed by old classical authors in *tolle causam.* If the cause is not in errors of refraction, or muscular weakness, then it must be sought elsewhere, and, whether discovered or not, the value of medicine is then easily demonstrated.

This case shows the intimate relationship of the eye and the general nervous system, and that the study of eye symptoms may often point the way to a cure of an obscure and obstinate nervous disease. It also demonstrates that physics and physic require equal consideration from the physician.

SURGICAL TREATMENT OF DISEASES OF THE NOSE.*

BY W. E. GREEN, M.D., LITTLE ROCK, ARK.

It is the object of this paper to deal solely with those diseases of the nose that require surgical treatment for their relief.

The pathological conditions that affect the nasal passages are so numerous, varied in character, and far-reaching in their morbid action, that almost every organ in the human body may become involved through their baneful influence; the general health impaired, the vitality depressed, and the development dwarfed.

Chronic nasal obstruction not only affects olfaction, audition, and voice modification, through its interruption of the functions of respiration, but is often the exciting cause of inflammatory diseases of the pharynx, larynx, bronchial and pulmonary structures.

Almost the entire list of diseases of the middle ear, with their attendant deafness, are dependent upon nasal obstruction; as are also many affections of the eye. It is impossible to estimate the influence that nasal diseases play in reflex phenomena; many cases of headache, neuralgia, cough, asthma, etc., are dependent upon this cause. The relationship of nasal disorders to other diseases of the human system is of such vast importance that it becomes the duty of every practicing physician to so familiarize himself with their general characteristics that he can readily detect and intelligently treat them. The prognosis in these

* Read before the Missouri Institute of Homœopathy.

cases is usually good, and the operations give rise to the most brilliant results of any in the field of special surgery.

The first condition that will engage our attention is *rhinitis hypertrophica.* This is essentially a chronic inflammation of the nasal passages with consequent thickening of the pituitary membrane and turbinated structure, with permanent turgescence of the capillary vessels. It is generally the result of acute catarrhal attacks; and whatever predisposes to these, favors its development.

The diagnosis is made by an ocular inspection. The degree of tissue-resistance and the amount of thickening may be ascertained with a flexible copper probe gently pressed against the parts. The hypertrophied condition must be distinguished from other pathological growths, such as polypus, ecchondrosis, deflected septum, etc. For convenience of description in treatment, we will designate hypertrophies according to position, as anterior and posterior.

Treatment.—Before resorting to operative measures, any acute inflammatory condition that may exist should be subdued by means of alkaline and mild astringent washes, and by the internal administration of the indicated remedy. A solution made according to the following formula is one of the most efficacious and pleasant of any that I have used for this purpose; it is alkaline, antiseptic, soothing, slightly stimulating, and its application imparts an agreeable sensation. It is applicable in all catarrhal conditions when cleansing and sedative action is required.

℞	Sodii bicarb. } Sodi bibor. }	aa ʒ xvj
	Eucalyptol } Thymol }	aa ℈ j
	Menthol	gr. x
	Ol. Gaultheriæ	gtt. x
	Glycerini	f ℥ xvj
	Alcoholis	f ℥ iv
	Aquæ	q.s. ad cong. j
M.		

This lotion should be diluted with three or four parts of warm water and applied by means of the post-nasal syringe or atomizer, two or three times daily. In acute cases and

those that are attended with a profuse watery discharge, its use should be followed by the application, with the spray, of a 2 per cent. solution of antipyrine.

Another prescription that I have used with excellent results is the following:

℞ Listerine..... f ʒ ij
Pinus can. (dark)..... f ℥ ss
Glycerine..... f ʒ x
M. S.—Teaspoonful to two ounces of warm water.

This preparation may be applied pure, with brush or applicator, to the pharnyx or naso-pharnyx in either acute or chronic conditions of those parts.

When the discharge from the nasal passages is thick, yellow, and offensive, the sulpho-carbolate of soda, in the strength of one teaspoonful to the pint of warm water, may be substituted for the preceding.

A splendid wash, and one that is always at hand, is chloride of sodium, one teaspoonful to one pint of warm water. The patient can be instructed to insufflate this several times daily. I direct its use in conjunction with the other treatment in all bad cases, and after operations upon the nose.

For an astringent wash, there is no better than sul. zinc—one-fourth to one-half grain to the ounce of water. It is applicable in all cases where astringent remedies are desired.

Before beginning any of the operations upon the nose, the parts should be rendered insensible by the use of a 4 per cent. solution of cocaine, applied with the spray; or a pledget of cotton saturated with the solution and placed upon the tissue to be removed. Four to six minutes is sufficient time to allow the cocaine to act before beginning to operate. Many patients are unpleasantly influenced by this drug; especially when a weak heart exists. In subjects so afflicted, it is always proper to use the drug sparingly, and, unless absolutely necessary, apply it to but one nostril at a sitting. Digitaline, in $\frac{1}{50}$ grain dose, is the best remedy to overcome the depressed cardiac action; and hyosciamine, in $\frac{1}{100}$ grain dose, will promptly relieve the nervous symptoms.

Of the various methods to overcome nasal obstruction,

all but two may be dismissed as unworthy of consideration. These two are the cold wire snare and the galvano-cautery. In most cases, where it can be used, we give the preference to the snare; especially where the obstruction is large.

The operations with it are attended with more pain and are followed by more bleeding, and are usually more difficult of execution than are those done with the cautery; but the subsequent pain, soreness, and discharge are less, the wound heals more quickly, and the results are usually more satisfactory.

The snare is employed in both anterior and posterior hypertrophies, where considerable thickening exists, and is applied as follows: The nostril is dilated, preferably, with a Jarvis, Frankel, or a Lenox-Brown's self-retaining speculum, and illuminated by a head mirror. The tissue to be removed is transfixed by a Jarvis needle; passed through the base of the hypertrophy, close up to the periosteum; the wire loop is then carried over the head, pushed back, and caught over the point of the pin; considerable manipulative effort is often necessary before this can be accomplished. After the wire is caught, the screw is slowly turned, until the offending mass is cut away. Some pain, at times, attends the operation and considerable hæmorrhage may follow, though usually it is slight. If much bleeding is anticipated, it is best to apply a pledget of styptic cotton to the wounded surface; posterior growths do not usually require the use of the pin. After operation, the parts are kept cleansed with some of the solutions previously mentioned. As a soothing application, I recommend that the following salve be applied several times daily, by means of a camel's-hair brush or a cotton applicator:

℞	Carbolic acid	gr. ij
	Tr. calendula	gtt. xxx
	Lanolin	ʒ vij
	Almond oil	ʒ j

M. Ft. ungt.

Small hypertrophies, and those that are inaccessible to the snare, especially those situated upon the superior tur-

binated bones, I remove with the galvano-cautery by simply burning deep furrows through them; the cicatricial contraction that follows acccomplishing the desired result. This operation is seldom attended with pain or bleeding, but it is followed by considerable soreness, much discharge, and heals slowly. The same after-treatment applies here, that was recommended after operations with the snare.

Posterior hypertrophies of the turbinated bones, and glandular masses of the vault of the pharynx, are revealed by the aid of the rhinoscope. Before a satisfactory examination of the posterior nares and naso-pharynx can be made, it is necessary to draw forward the soft palate and fix it in position. This can best be done as follows: after spraying the nares and naso-pharynx with cocaine, a piece of small soft rubber tubing is passed back through either nostril and brought forward, and out through the mouth, made taut and tied in front over the upper lip. (To prevent undue pressure upon the lip a piece of folded cloth should be placed between it and the rubber cords.) This steadies the velum palati, and gives ample room for exploration and operative manipulations; all operations in the posterior nares and naso-pharynx I perform by the aid of the rhinoscopic mirror. Adenoid growths, or papillomata, are cut away with the scissor-forceps, while the more formidable neoplasms are removed with the snare, passed back through the nostrils. Hypertrophies of the turbinated bones and septum are treated with the cautery. I use a long electrode (made by myself), curved forward one and one-fourth inches upon itself; with this instrument, passed by way of the mouth up into the posterior nares, and manipulated by aid of the rhinoscope, I burn deep gashes into the hypertrophied tissue, depending upon the cicatricial contraction and nutritive changes incident to the traumatism for the curative results; small thickenings and growths are entirely cut away by this means. After the operation, the daily use of the antiseptic wash, with the post-nasal syringe, should be instituted, until the parts have perfectly healed. Most satisfactory results can be obtained by this mode of treatment.

Ecchondroses, or cartilaginous growths, spring from the septum, nasal floor, and, exceptionally, from the ethmoid and frontal cells. They assume every variety of form, from the teat-like prominence to the shelf-like projection. They develop slowly, and are frequently associated with septal deviations, and produce nasal obstruction with its consequent evils. The knife, the saw, the chisel, and the burr, all are instruments that can be utilized in the removal of these neoplasms. I have discarded all but the first and last. The operations performed with the knife or chisel are attended with profuse hæmorrhage. The use of the chisel is seriously objected to by the patient on account of the jarring produced by the blows of the mallet. The saw will catch, spring, and deviate from its course, and often does not remove the desired amount of tissue. Small ridges and teat-like projections near the meatus I cut away with a Seiler's curved cartilage knife; entering the knife from below, and incising the mass upward, to half its depth; then reverse and cut downward until the excrescence is removed; I always aim to leave the cut surface concave in appearance. The bleeding can be at once checked by the application of a pledget of styptic cotton. The wound gives but little discomfort and heals rapidly. Where the redundancy of tissue is great, or ossification has taken place, I prefer to cut with the burr, propelled by an electric motor. When this is driven at high speed, it cuts rapidly, gives comparatively no pain, and the operation is followed by but slight bleeding; any localized thickening of the septum, exostosis, bony spur, or enlargement of the turbinated bone may be managed with this machine. After the use of the drill, any unevenness of surface, shreds of tissue, or spicula of bone should be removed with the scissors, and the bleeding checked by the application of a pledget of styptic cotton. The operation is not usually followed by any great degree of inflammation, and the wounds heal about as quickly as those made by other instruments. Often the nasal passage is obstructed by a shelf-like curvature, or overhanging plate of the turbinated bone, that drops down and touches the

floor of the fossa. This projection may be cut away with Rumbold's heavy nasal scissors.

Exostoses, or bony growths, usually spring from the septum; they are often an extension of the cartilaginous growths, the one shading into the other. They spring from the periosteum, are dense, and require to be cut away with the drill or chisel.

Deviations of the septum, sufficient to interfere with the normal nasal function, may be considered as pathological conditions. Usually the deformity involves only the cartilaginous portion, but it may include the bony structure as well; at times, the septum retains its natural thickness and deviates to one or the other side, giving a convexity on one side and a concavity on the other; or there may be a cleavage, leaving one side straight and the other convex, or both sides may bulge; again, the cleavage may be at the tip, both walls flaring out, flange-like. The deflection may be angular, perpendicular, double convex, wave-like, etc.—all these distortions produce more or less obstruction.

The successful management of septal deformities involves several principles and operative procedures, according to the conditions that may exist. Where the septum retains its normal thickness, and is simply deflected to one side or the other, it may be straightened by making a longitudinal incision, with a curved bistoury, through its greatest prominence. If the wall seems unusually stiff, two or three additional cuts, at right angles to the first, may be made; then with the finger, or handle of the knife, the septum should be pressed into place and maintained there by plugging the nostril with tampons of antiseptic lint. These should be changed every second day, until firm union has taken place; should bleeding occur from the opposite side, it should be controlled by applying pledgets of styptic cotton. The same results may be obtained by the use of the steel septum punch, but it is in no way superior to the bistoury, only with it the operation is more quickly performed. The thin blade should be introduced into the obstructed nostril and the cutting blade into the open side; the forcep is then

locked, same as an obstetrical forcep, placed in position, and the shield removed; by compressing the handles the blades are made to cut through the walls. The septum is pressed into position, and maintained as before described. If considerable thickening accompany the deformity, the operation should be performed with the electric motor. The adventitious tissue should be removed with the burr, on the bulging side, and the septum cut away until it is thin, flexible, and can be easily straightened and maintained so. I have often straightened the septum by cutting a deep groove through one of its walls with the burr, and trimming it down until sufficiently flexible to be pressed into place. When only one wall is distorted, the other being straight, the faulty plate should be cut away; this leaves the septum very thin, and it may be necessary to keep the nostril plugged until healing takes place.

When the tip of the cartilage is turned to either side, flange-like, it should be trimmed down with the scissors or knife until the passage is sufficiently patulous. After any of the cutting operations about the septum there will often be, in the process of healing, a proliferation of granulations that will have to be cut away with the knife, scissors, or cautery. When this tendency exists, it may be overcome by keeping the nostril plugged until the healing process is accomplished.

Polypus.—Two varieties of this neoplasm are found in the nose; the mucous and the fibrous. The mucous, composed of myxomatous tissue, intermixed with fibrous, are usually pedunculated, round, or ovoid in shape, pale in color, and generally spring from the middle turbinated bone; they are often multiple and have a decided tendency to recur. Their color, softness, elasticity, and hygroscopic tendencies are unmistakeable characteristics. There are many modes of treatment recommended for the destruction of these growths; but, in my experience, all are, with one exception,—abscission with the snare, more or less unsatisfactory. While in some instances this operation is a simple one, in most cases it requires considerable manipulative skill

and patience to engage the loop about the growth ; but little pain or hæmorrhage attends the removal. To prevent a recurrence, the site of the polypus should be cauterized by galvano-cautery and the chronic catarrhal condition favoring its reproduction should be treated and relieved.

Fibromata.—This form of polyp is fibro-myxomatous, being mainly composed of fibrous tissue, and freely supplied with blood-vessels ; the color is the same as that of the surrounding parts. They are firm and resisting in texture ; have broad base, and have their origin in the naso-pharynx. They spring from the periosteum, develop rapidly, displace adjacent structures, and distort the features. If not removed they work great devastation, and produce death through exhaustion or hæmorrhage.

The older operation for the removal of this neoplasm was to invade the region from without, bring the tumor into view, and remove it. This procedure is a formidable one, and the mortality great.

By the aid of a rhinoscopic mirror, the wire of a galvanic écraseur should be engaged about the base of the growth, and the mass slowly cut away. If this is not feasible, the growth may be removed piecemeal by a large cautery knife manipulated through the posterior nares. The base should be subsequently destroyed by applications of the cautery at stated periods.

Cystic growths are sometimes met with in the nasal passages ; these should be cut away with the scissors, forceps, or snare.

The nasal cavities, like other portions of the body, may at times be the seat of sarcomatous and carcinomatous growths ; they occur primarily, or may be the degenerated output of other neoplasmic growths ; they present the same pathological features here as in other parts of the body. Operations for their removal are formidable and the results are unsatisfactory. They are fully described in the works on general surgery, and are beyond the limits of this paper.

Though the title of this article limits its scope to nasal diseases, I cannot consistently close it without giving a

passing notice to diseases of the tonsils, since they play such an important part in the propagation and maintenance of nasal troubles. There is no part of the human economy that escapes the baneful influence of these glands when diseased. They render the patient more liable to catarrhal attacks, and increase the gravity of all diseases of the air-passages. When greatly enlarged they interfere with free respiration, depress the vitality, impair the general health, and develop troubles that have no tendency to improve until the hypertrophied glands are removed.

When the tonsil once becomes chronically enlarged, in my experience there is no remedy that will prove curative save removal. I have tried patiently every method of treatment, both local and internal; I have faithfully and persistently given the indicated remedy, but have never yet cured a case of true hypertrophic tonsilitis. Local applications are inefficient; interstitial injections are objectionable, at times dangerous, and usually fail. Escharotics are painful in their application, slow in action, and leave an irregular and ugly surface. The same objection applies to the galvano-cautery puncture, though it is more certain in its action. One great objection to all these methods is, the gland is not entirely removed; a stump of cicatricially contracted tissue remains, that is liable to take on a diseased condition. The mode of treatment, *par excellence*, is removal with either the bistoury, tonsillotome, or cold wire snare. This method voices its superiority in immediate clearing up of speech, rapidity with which the congested condition of the pharynx subsides, the return of appetite, and the prompt and permanent improvement in the general health.

When the tonsils are small, and it matters not how small, if diseased they should be removed. The probe-pointed tonsil bistoury is the best instrument with which to excise them. The gland should be drawn out with a tenaculum, and incised from below upwards, care being taken to remove all the diseased structure. When the tonsils are large, and can be easily caught within the grasp of the guillotine, it is

the most appropriate instrument with which to operate. McKenzie's instrument, or some modification of it, is the best. The operator, standing or sitting in front of the patient, firmly grasps the handle of the instrument in the right hand and places it in position, while, with a tenaculum in the left, he draws the gland well into the elliptical opening; the blade is then rapidly pushed forward with the thumb of right hand.

In timid patients and children, it is sometimes proper to remove the tonsil with the cold wire snare. The loop is adjusted around its base, and made to cut through its substance by slowly turning the screw. The operation gives but slight pain, and scarcely any bleeding follows.

Any of the operations upon the tonsil may be rendered painless by injecting a few drops of a solution of cocaine into the little crypts.

I have had but one severe hæmorrhage follow excision of the tonsils, and that was secondary and was checked by pressure.

I do not approve of the method of clipping, or partially removing a tonsil. The entire gland should be cut away, for, so long as any of the diseased structure remains, it is liable to take on acute attacks, and renew the troubles.

Elongated Uvula.—An hypertrophied uvula, like an enlarged tonsil, will, by its irritating influence, perpetuate a nasal trouble. The treatment is by removal. This may be done by means of a pair of scissors and forceps. The end of the uvula should be grasped by the forceps, drawn forward, and cut off at the desired point with the scissors. The pain and hæmorrhage are slight, but the soreness that sometimes follows is very severe, and will almost entirely prevent the patient taking solid food for several days. It is best not to remove the uvula at the beginning of the treatment of a case; the suffering that follows gives the patient an exaggerated idea of the severity of the treatment he is to undergo, and he will unceremoniously quit you.

Satisfactory results cannot be obtained in the treatment of diseases of the throat and nose unless thorough, and unless every cause of irritation be removed.

HYSTERICAL AMBLYOPIA.*

BY JAS. A. CAMPBELL, M.D., ST. LOUIS, MO.

The obscurity as to the causes upon which it depends, the uncertainty and irregularity in reference to the sequence of its symptoms, coupled with the remarkable and varying phenomena which attend that general functional neurosis of the nervous system known as hysteria, must always make it an interesting topic to medical men.

The object of this paper is to briefly present for discussion that phase of this complication known as hysterical amblyopia.

Authority tells us that it is questionable to make the diagnosis of hysteria dependent upon the presence or the absence of a particular symptom. The same difficulty in reference to the diagnosis of hysterical amblyopia will always be present.

A temporary partial or total loss of vision may be the result of several distinct causes. It may be a part of general debility and subsequent to fevers. It may follow any exhausting illness or hæmorrhage. It may appear during parturition. It has followed digestive and intestinal irritation. Toxic influences may likewise produce it. Temporary loss of vision may occur as the aura of an epileptic attack. These, with others which might be given, will represent some of the varied forms of temporary amblyopia.

Hysterical amblyopia can only be diagnosed by exclusion. The history of the case will always greatly aid in arriving at

* Read before the American Institute of Homœopathy, June, 1890.

a definite conclusion. The defective vision results from retinal anæsthesia, which, strange to say, is generally associated with marked hyperæsthesia or sensitiveness to light.

It is principally found in hysterical females, whose histories will develop a gradually accumulating series of visual aggravations, which resist every form of optical correction, prismatic exercise, local or internal treatment. There is usually intense photophobia, partial ptosis, neuralgic pains in and around the eyes, flashes of light before the eyes, even in the dark, and phosphorescent waves and dark shades from the periphery toward the center, with the disappearance of the object looked at.

Hysterical amblyopia may be partial or total. It sometimes affects one eye, generally both. Again it may manifest itself by hemianopsia.

The temporary loss of vision may occur at stated times. Noyes relates a case where the vision went out every twenty-four hours, when everything was perfectly dark for ten or fifteen minutes. I have a similar case under my care at the present time, a young girl of sixteen, who has a periodic disappearance of vision for ten or fifteen minutes. This comes on without any premonitory symptoms, but it is followed by severe headaches.

Hysterical blindness may suddenly disappear and be supplanted by other hysterical symptoms in other parts of the body.

In some cases there is a partial color blindness ; in others a peculiar hypersensitiveness to certain colors. I met a lady some years ago who was acutely sensitive to red. She would not wear, could not look at, or touch anything red without great nervous irritation. So sensitive was she to it that she affirmed her ability to determine the irritating color, red, by the sense of touch alone.

It has been suggested that these hysterical amblyopic conditions are caused by a partial ischæmia or anæmia of the retina, resulting from a reflex spasmodic contraction of the arteries supplying the visual apparatus, a vaso-motor neurosis through the sympathetic nervous system. This is

indeed quite in keeping with the existing condition. I have repeatedly examined cases of hysterical amblyopia with the ophthalmoscope, and have almost invariably found contracted retinal arteries, though at times no fundus changes could be detected.

Hysterical complications are generally presumed to belong to womankind alone, but this is not always so. Briquet states that in 1000 cases of hysteria 50 were in men. He points out that it is more frequent in women on account of congenital peculiarities, acquired conditions, physical functions, and social environments. He likewise says that in 93 cases of anæsthesia in different sensory organs, amblyopia was found six times. Of the cases of hysterical amblyopia I have seen, only one ill-defined case was in a man.

There is a prevailing impression that all hysterical complications have their origin exclusively in the genital organs, but this has been denied by excellent authority. Scanzoni and Amann state that they found the genitals in a healthy condition in 20 per cent. of the cases examined. Still it is without doubt true, that many cases of hysterical disease find their origin in the generative organs, and are cured when these irregularities are removed. The view that it has its root in the whole nervous system, and that it may be developed by the most varied external influences, seems to be a very consistent one.

Most writers agree, however, that it is closely allied to, and may be followed by various other nervous phenomena, such as epilepsy, chorea, or insanity. A case under my care some time ago favors this view.

In 1883 a young married woman, age twenty-five, was brought to me from a distance with both eyes tightly bandaged, not being able to tolerate the least exposure to light. Her vision was very defective. She had been in this condition for five weeks, but her eyes had been sensitive and painful for several months. Owing to the extreme photophobia and irritability of her eyes, an examination was made with much difficulty, and it could only be accomplished under the weakest illumination, through a blue

tinted lamp chimney. The pupils were medium in size, reacting poorly, and after a slight contraction went through a quick elastic expansion. The arteries were small; veins full. The optic disc was red, but clearly outlined and normally defined. Her spine was supersensitive. She had frequent light flashes before the eyes. Under galvanism, Ferr. phos., Conium, Puls., Calc. phos., and by the correction of an anterior uterine flexion (by her physician), she made a rapid and excellent recovery. A few years afterward she began to show signs of general nervous disorder and mental aberration. Last fall she was taken to a sanitarium, and was thought to be much improved ; but recently, while on her way home, with her husband, she walked to the door of the car, which was going at a high rate of speed, and deliberately threw herself from the car and was killed.

We should carefully differentiate between transitory hysterical amblyopia and the temporary obscurations of vision which may occur in the beginning of glaucoma; and likewise not confound it with a paresis of the accommodation which always obscures near work, and also distant vision, in hyperopic subjects, although even this condition may have a hysterical basis.

One year ago Mrs. H., age thirty-four, was brought to me from southern Illinois. For more than a year she had not been well; was nervous; had frequent sick headaches, but no especial eye trouble until about one week before ; then, while sewing, the left half of her visual field disappeared. There was no pain, but intense photophobia. Since then the eyes had pained some, and the lids were so weak that she could hardly raise them. Even in the dark she could only hold her eyes open for a moment. She had a very sensitive spine, and some pains from the ovarian regions down into the limbs.

The thick bandages were removed from the eyes, and after much difficulty a brief view of the fundus was obtained. The arteries were contracted, but otherwise the condition was normal. She could count my fingers at three feet.

My diagnosis was hysterical amblyopia from reflex ovarian irritation. She returned home and was treated by her physician in keeping with this view, according to suggestions agreed upon, and she made an excellent recovery; at least for six months she

thought she was well. In January of this year her eyes began to trouble her again. She returned to me in last March, stating that from January 1 to that time her sight had temporarily disappeared six times, once for over an hour. Each attack was preceded by a severe pain between the shoulders. The intense photophobia, partial ptosis, defective vision ($\frac{15}{70}$), etc., were all present. Her vision was carefully examined under atropia, and very little optical error was found. Under galvanism, Onosmodium, Macrotin, and general massage, she made rapid progress, and returned home in three weeks very much improved, with vision $\frac{15}{20}$.

Hysterical amblyopia will call for the same general line of treatment that is indicated in hysteria proper, for it is merely one manifestation of general hysteria. Such well-known remedies as Phos., Ferr. phos., Aurum mur., Puls., Platina, Macrotin, Onosmodium, Ignatia, Sepia, etc., will frequently be called for. Combined with them I have found galvanic electricity of the greatest value. But while remedies are useful, we must not forget a very important truth, well stated by Erb, who says: "In the treatment of hysteria special precautions must be employed. In scarcely any other neurosis do psychical factors play so important a part. Confidence in the physician and the remedy is the best guarantee of success." It is probably owing to this psychic influence that such remarkable results were obtained by metalloscopy and metallotherapy by the Commission appointed by the French Biological Society in 1877, an account of which will be found in the first and second volume of "The Brain." They remark upon "expectant attention" and "transference phenomena," now so familiar in the present popular hypnotic treatment of the same complication. The experiments of Charcot and others prove that hypnotism undoubtedly has a wonderful influence in controlling hysteria and hysterical amblyopia, but it should never be employed, except within guarded limits and under intelligent precautions.

It is indeed strange that so little has been written on hysterical amblyopia, many authorities on nervous diseases barely making mention of it. This may probably be

accounted for by the fact that these cases are generally recorded in a curious rather than in a scientific temper. In this respect they are interesting, and beyond this the subject well deserves close attention and study. It is too often the case that hysteria is regarded as a fanciful rather than an actual disease. It is a serious something, a positive and actual disease, and should always be so regarded, studied, and treated.

A CASE OF MEMBRANOUS RHINITIS.*

BY IRVING TOWNSEND, M.D., NEW YORK.

Hannah S——, aged six years, came to the throat clinic at the New York Ophthalmic Hospital, Dec. 2, 1889.

Family history, as well as appearance of child, shows a well-defined scrofulous tendency. On examination, nose is found to be obstructed by a distinctly membranous deposit, almost completely occluding the nares and rendering nasal respiration impossible. The character of the membrane was similar to that of true croup, though the tendency to hæmorrhage from the mucous membrane underlying the deposit, together with a good deal of physical prostration, led to the consideration of the possibility of diphtheria, but which the farther history of the case disproved. Laryngeal examination showed swelling and hyperæmia of the mucous membrane and the presence of much thick, viscid, tenacious mucus. The patient suffered much discomfort from a hacking cough, evidently due to tracheal irritation.

The remedy given was Arum triphyllum, and the mother was directed to syringe the nose daily with a solution of hydrogen peroxide, which was also used as a gargle.

Dec. 4: Reported marked improvement, in the general condition of patient as well as the local trouble, though the instructions in regard to syringing had been but indifferently carried out, owing to the resistance made by the child, efforts to control which were followed by great prostration. Treatment continued.

Dec. 9: Discharge from nose profuse, thick and muco-purulent in character, containing shreds of broken-down membrane. Hoarseness increased; cough dry and hacking. Prescribed Hepar sulphur.

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* Read before the American Institute of Homœopathy, June, 1890.

Dec. 16: Considerably improved; cough less, and nasal discharge thinner and less profuse. Treatment continued.

Dec. 20: Condition about the same as at last examination. Remedy continued. Applied nitrate of silver, twenty grains to ounce, to nose and throat.

Dec. 28: Gradual improvement. Treatment continued.

Did not see child again for about two weeks, when she was brought to my office with a condition similar to that when first seen five weeks before. For the past week had taken no medicine. The nasal passages were filled with membrane and mucopurulent material. Prescribed Kali bichromicum. For cleansing, used a solution of sodium bicarbonate, and afterwards applied the twenty grain solution of nitrate of silver, by means of cotton on a probe, daily.

Jan. 15: Improved. Discharge from nose thick, profuse, and shreddy, but is easily dislodged, leaving simply a deeply congested mucous membrane beneath. Treatment continued, and patient gradually improved for the next two weeks; discharge becoming thinner and less profuse.

Feb. 2: Whole condition very much aggravated; hoarseness, cough, and dyspnœa; nares filled as before by membrane; intense congestion and swelling of larynx. This attack differed from preceding ones only in degree, being considerably less severe. Prescribed Acetic acid and ordered a gargle and spray to throat and nares of a 10 per cent. solution of vinegar.

Feb. 8: Improvement marked. Discharge from nose less than for weeks, and general condition of patient improved. Treatment continued.

Saw her from time to time for the next two months, and there has been no recurrence of the trouble. Regarding treatment, I should state here that during most of the time she took, in addition to the remedies prescribed, an emulsion of cod liver oil.

No record of temperature was kept, though it was taken occasionally and varied from normal to one hundred and one degrees.

Of course the results in a single case are not a reliable basis from which to draw deductions regarding the value of any particular therapeutic measure. The gradual improvement of the condition, however, during the period that the nitrate of silver was used, would seem to refute as far as a

single case can, the idea, which I believe is generally accepted, that it is pretty sure to aggravate a croupous or diphtheritic form of inflammation and increase the formation of membrane. I was led to the use of the vinegar solution by many satisfactory cases reported from the use of Acetic acid internally in membranous croup, though I do not remember to have seen it recommended as a local application; however, it may have been used in that way. As regards internal medication, Hepar sulphur seemed to act well for a time, until, on the appearance of some indication for Kali bichromicum, the latter was substituted, and later Acetic acid. The peculiar features of the case are the sub-acute course and the number of times (extending over a period of three months) that the membrane was reproduced; apparently, in the last instance, as the result of taking cold. The appearance of the larynx, together with the tenacious, fibrinous character of the secretion, would seem to show a tendency toward the development of the membrane in that location, though to a much less degree than in the nose. Strong factors in the etiology of the disease I conceive to have been faulty nutrition plus the so-called strumous diathesis, evidences of which were not lacking in other members of the family as well.

THE USE OF HOMŒOPATHIC REMEDIES IN GLAUCOMA.*

BY H. H. CRIPPEN, M.D., NEW YORK CITY.

In projecting this article I had no intention of detracting from the value of the excellent paper on this subject that came before this bureau in 1883. In disappointment at the frequent failure of internal remedies for this trouble, it was intended to ascertain what advancement had been made in this direction since Dr. Geo. S. Norton presented the paper spoken of, and to utilize the gathered knowledge as a reference for others, as well as myself. To this end, late in 1889, I addressed the following circular letter, with inclosed schedule of questions, to those of the profession that I hoped could give information on this subject:

SAN DIEGO, CAL., 1889.

DEAR DOCTOR:

A careful review of the literature of glaucoma brings forcibly to mind that reports on the use of internal remedies for the cure of this disease, or for the relief of certain of its symptoms, are very few and unsatisfactory. This ought not to be; the principles which guide us to such success in the administration of remedies for other ophthalmic disorders—a success which gives us a standing as oculists superior to those who follow empirical methods—ought not to fail us in the treatment of glaucoma.

True, we are by no means clear, even at the present day, on the pathogenesis of glaucoma; we can only formulate a few pathological conditions which are fairly constant to the disease, and cannot say whether these tissue changes depend *primarily* upon a

* Read before the American Institute of Homœopathy, June, 1890.

precedent vaso-motor disturbance, or whether they are the results of a chronic inflammation, but, notwithstanding this lack of unanimity of opinion as to the true nature of the disease, its symptoms are sufficiently uniform in their constancy and in the order of their appearance to afford a basis for the selection of remedies according to our law of cure.

In view of these facts you are the recipient of this personal appeal to assist in enlarging our therapeutical resources for the treatment of glaucoma. It is hoped to reach every homœopathic oculist in the world and, by means of this circular letter, to present to the next session of the American Institute of Homœopathy a full report on "The Use of Homœopathic Remedies in Glaucoma." In this coming report you will be entitled to full credit for every item of *practical* interest, no matter how minute, that you are kind enough to furnish, but, in order to bring the work within prescribed limits, it is requested that your answers conform to some extent to the requirements of the appended schedule. Trusting that you will join in giving an *early* response to this appeal I am,

Very sincerely yours,

H. H. CRIPPEN.

SCHEDULE.

1. (a) What percentage of cases of glaucoma have you cured (*restitutio in integrum*) with internal remedies alone?

Whole number of cases of glaucoma treated.	*No. treated with remedies before adopting surgical measures.*	*No. cured by internal remedies.*

(b) Please number your cases, and cite state of vision, type of disease, and the remedy used, as follows:

Case.	Vision at its worst.	Vision restored to.	Type of glaucoma.	Remedy.	Preparation used.
I					
II					

2. (a) In what percentage of cases of glaucoma have you been able to *arrest* the progress of the disease by the use of internal remedies alone?

(b) Cite cases and remedies, as follows:

Case.	Vision at its worst.	Vision restored to.	Type of glaucoma.	Remedy.	Preparation used.
I					
II					

3. Failing to *cure* glaucoma or to *arrest* its progress, in what

percentage of cases have you been able to favorably modify its exacerbations by the use of internal remedies?

4. Name the remedies, in the order of their usefulness, with which you have succeeded in relieving the pain of glaucoma.

(a) Before surgical measures were employed.

(b) After operative procedures.

5. Cite in the briefest possible manner those cases which are markedly illustrative of your success in the treatment of glaucoma with internal remedies, giving prominent symptoms, noting the influence of the drug in modifying the course of the disease, and stating concomitant treatment if any.

6. Taking the principal remedies with which you have succeeded in modifying the course of glaucoma, give what you consider the characteristic symptoms of each drug in this disease.

This schedule, as a means of obtaining a uniformity of answers, was particularly intended to serve as a basis from which certain logical demonstrations might be drawn concerning the use of internal remedies, administered according to the law of similars, in glaucoma. By its use certain errors in the report of cases could be checked, and doubtful cases would be accorded no more than that value which properly belonged to them.

With regard to the answers obtained I am indebted to a few for their courteous attention to the questions in point, but the great majority of our specialists have utterly failed to make any report on this subject. Whether this default on their part is due, on the one hand, to a lack of method in recording their cases, or, on the other, to indifference, is unknown, but I believe it will be a matter of great regret that we are thus deprived of the valuable experience of those whose records ought to be replete with cases treated by means of internal remedies.

We may now proceed to pass in review those answers which have been received, premising, however, that many of these have been in the nature of private letters, and that the writer has found it necessary in such cases to express in his own words the suggestions conveyed by the correspondent.

They are given in the order in which they have been received.

1. Wm. Simpson, M.D., San Jose, Cal., briefly answers all questions in the negative, saying that he has tried all the internal remedies that he has heard recommended, with the single exception of Osmium, and has never seen the slightest alleviation from the use of any drug administered internally.

2. Harold Wilson, M.D., Detroit, Mich., believes there is a middle ground between the exclusive use of drugs for the relief of glaucoma and the relegation of its treatment to measures entirely surgical.

3. F. Park Lewis, M.D., Buffalo, N. Y., finds that his experience warrants the general statement, "That almost all cases of glaucoma taken in the prodromal stage can at least be arrested." Further than this he says in reply to the circular letter :

"I have before me now the record of a man, æt. forty-five, when he first consulted me in '83. At that time R. V. was $\frac{5}{20}$, T + 2, field narrowed toward the nose, fundus indistinct, L. V. $\frac{6}{10}$, T + 1 (?). A broad iridectomy failed to save any sight in R., and atrophy ultimately followed. Under remedies, vision in the left eye became normal and has remained so to date of present writing [Dec. 12, 1889]. A peculiar feature is, however, that every fall he suffers a slight attack, which is easily controlled, and the eye keeps in good condition throughout the year."

I recall now six other cases, which I see from time to time, in none of which has any vision been lost since treatment began, varying from six months to three years. In some of these cases, one eye had been lost previous to my first examination, or vision had been markedly reduced. In none of these cases has there been improvement of sight, though the pain and general inflammatory symptoms have been generally relieved.

"In a case of fulminating glaucoma, which came under my care last summer, neither remedies nor double iridectomy afforded the least relief, absolute glaucoma resulting.

"To summarize my experience I would say that I regard glaucoma as curable in a large proportion of cases if the

disease can be treated before tissue changes have occurred. After that, relief may be obtained, but vision rarely restored.

"The remedy which has been of the greatest general value is Phosphorus; after that perhaps Bryonia, Gelsemium, and I am testing Æthusa. Osmium I have employed, but am not sufficiently satisfied with its value to use it often."

4. T. Docking, M.D., San Diego, Cal., says:

"In the only case in which my memory enables me to speak positively of *Similia's* treatment, the symptoms came quite insidiously while the patient was experimenting with mesmerism, and blindness was observed from glaucoma almost as the first symptom. Merc. sol., Ars., Colch., Spig., and Bry., were given; but by the end of three years iridectomy was performed and the lens removed, with little or no improvement. This was in 1873; the other eye still remains normal, notwithstanding excessive use. Hardly any pain was experienced, from first to last, in the diseased eye."

5. Thomas Nichol, M.D., Montreal, claims to have treated a large number of cases of glaucoma, successfully too, but not having kept notes fails to report any individual records.

6. E. T. Allen, M.D., Omaha, Neb., presents a schedule filled out as follows: 1. whole number of cases treated, 10. Number treated with remedies before adopting surgical measures, 4. Number cured by internal remedies, 0.

Case.	Vision at its Worst.	Vision Restored to	Type of Glaucoma.	Remedy.	Preparation Used.
I	0		Simplex	Enucleated	
II	$\frac{20}{40}$	$\frac{20}{30}$	"	Iridectomy	
III	$\frac{20}{80}$	$\frac{20}{20}$—	Inflammatory	Cyclotomy	
IV	$\frac{20}{30}$	$\frac{20}{20}$	Incipient	Iridectomy	
V	Counts fingers.	$\frac{20}{100}$	Secondary	Iridectomy Ars.	3x
VI	$\frac{4}{200}$	$\frac{8}{200}$	Chronic Infl.	Iridectomy Rhus	1x
VII	Counts fingers.	$\frac{10}{200}$	" "	Iridectomy Rhus	1x
VIII	$\frac{20}{80}$	>	Secondary	Iridectomy Phos.	6x
IX	$\frac{20}{50}$	$\frac{20}{20}$	"	Cyclotomy Spig.	30x
X	$\frac{20}{30}$	$\frac{20}{20}$—	Chronic Infl.	Duboisia	3x

2. (a) 10 per cent. (b) In Case X., vision increased from $\frac{20}{30}$ to $\frac{20}{20}$, in a chronic inflammatory glaucoma under Duboisia 3x.

3. 10 per cent.

4. (a) Spigelia, Duboisia, Heat. (b) Rhus, Phos.

6. *Duboisia:* Constant aching pain.
Spigelia: Sharp darting pains.
Rhus: After operations to subdue irritation.
Phosphorus: Photophobia.

16. Dr. Weil, Berlin, Germany, reports the following: 1. (a) Whole number of cases treated, 30. Number treated with remedies before adopting surgical measures, 20. Number cured by internal remedies, 10.

(b) Case I.: *Vision at its worst*—Eyes injected; pupils dilated; fundus hyperæmic. Eyes feel hot, dry, and stiff, as if they might protrude. *Vision restored to*—Symptoms of inflammation are removed; the eyes are restored to normal. *Type of glaucoma*—Inflammatorium. *Remedy*—Belladonna (Atropia 1x).*

2. (a) 3 per cent.

(b) Case I.: *Vision at its worst*—Fundus hyperæmic and hazy. Eyes feel hot, stiff, dry. Impression of the papilla n. optic. Vision—lights and colors flashing before the eyes; injection of the arteria retinæ. *Type of glaucoma*—Glaucoma simplex. *Remedy*—Belladonna (Atropia), 3–5 dilution.

Case II.: *Type of glaucoma*—Chronicum. *Remedy*—Arsen. (1–10), Sulfur, Merc. cor.

3. 20 per cent. Remedies that seemed to favorably modify the exacerbations: Belladonna, Bryonia, Arsen., Merc. v., Aurum, Arnica.

4. (a) Belladonna (Atropia sulph.), Arsen., Merc. cor. (b) Belladonna (Atropia), Arnica, Chamomilla.

6. *Belladonna* (Atropia): To modify the inflammation and dilatation.

Arsenicum: To modify the throbbing pains, the obscurity.

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* Atropia sulph. is always used internally.

Merc. cor.: To modify the symptoms after the storm.

8. M. O. Terry, M. D., Utica, N. Y., points out his belief that some cases of asthenopia are dependent upon hyperæsthesia of the cervical portion of the spinal cord and can be cured by cauterizing lightly from three to six times with Paquelin's thermo-cautery; also reports the cure of a case of exophthalmic goitre in the same way. Reasoning from this he gives as a "pointer" the idea that glaucoma may arise as a reflex trouble, consequent upon an hyperæmia of the cervical portion of the spinal cord, and thus become amenable to a similar treatment.

9. E. Lippincott, M.D., Memphis, Tenn., has treated one case of glaucoma with Thuya 3x. The case was that of a colored man who had lost an eye from glaucoma. "Thuya removed all pain from the eye, temple, and head. The general health improved and a chronic constipation was cured at the same time. The patient presented a condition similar to epilepsy, which was promptly relieved. The characteristic abdominal symptoms of Thuya were also present." Dr. Lippincott also remarks that "Undoubtedly the so-called antipsorics are the class of remedies applicable to this disease."

10. George S. Norton, M.D., New York City, replies as follows: "I will give you in brief my experience in this direction. My conclusions formulated nine years ago upon the treatment of glaucoma, as given in the last edition of the 'Ophthalmic Therapeutics,' have not been materially changed. In chronic glaucoma, when the tension has become increased and remains so without remission, I do not believe any surgeon is justified in delaying the operation. I have never seen beneficial results follow from internal medication in these cases of chronic (so-called inflammatory) glaucoma. In glaucoma simplex it is also a question as to the wisdom of delaying operative procedures, though this may be done if the vision, field of vision, tension, etc., are carefully watched and no tendency to increase is noted. That cases of this kind may possibly be held in check seems probable by the following:

Mrs. P——, aged fifty-nine, came to me March 27, 1889, complaining of gradual failure of vision for six or eight months, varying from one day to another. Grief seemed to have been the exciting cause in the beginning. The vision was always worse at night when tired and also in the morning after a sleepless night, to which she was subject. She had had no pain in the eyes, no headaches, nor halo around the light. R. V. $\frac{15}{40}$, L. V. $\frac{15}{30}$, not improved with glasses. Field of vision ; O. D., 30°u, 70°i, 60°d, 50°o. O.S., 35°u, 60°i, 55°d, 60°o. Tension in both eyes + 1 (?). Both optic disks were very white, with deep glaucomatous cupping. As an operation would not be listened to I consented to try other measures first. My prescription was galvanism, using a weak current, positive pole to eye and negative to forehead or back of neck, two or three times a week. Internally Nux vomica 30 was given. Under this treatment she seemed to improve, complained of less haziness of vision and less variation. On May 9, the test gave, R. V. $\frac{15}{30}$, L. V. $\frac{15}{20}$ (both eyes together $\frac{15}{15}$ difficult) V. F. was practically the same only a little more extended above. Since that time she has had galvanism and Nux at irregular intervals, and on May 27, 1890, the vision and visual field remained the same as when last tested, and she was using the eyes with comfort. The cupping of the optic disk, however, remains the same and the tension still seems to me to be a little plus. I expect ultimately that an operation will be required.

" It is, however, in the prodromal stage of the disease that I believe internal medication is of special value, particularly in connection with the local use of eserine during the attack. That the instillation of eserine will control an acute attack of glaucoma in the majority of cases has been confirmed in my experience, though I do not consider it of any permanent benefit in chronic glaucoma. It will frequently ward off an attack in its incipiency.

Several of my patients who have a tendency to increased tension from over-fatigue, excitement, etc., always have the drug by them, and a single instillation is usually all that is necessary to avert the danger.

" The following case will illustrate how the prodromal attacks may cease while the patient is under drug action :

" Mrs. B——, aged fifty-three, was first seen in August, 1881.

Questioning elicited the following history: For two years she had been subject to more or less severe attacks of pain in one eye or the other, with temporary blindness. In connection with this had been the halo around the light and dilatation of the pupil. The last attack had been about three weeks before I saw her and had been confined to the right eye. That the accommodation had been impaired was evidenced by repeated changes of glasses to stronger and stronger lenses. Upon examination I found R. V. $\frac{15}{20}$, L. V. $\frac{15}{40}$. Tn. Right pupil moderately dilated, left normal; no cupping of disks. Although no increased tension could then be detected I considered the attack to have been glaucomatous. This was confirmed when I saw her in a subsequent attack. I began internal medication according to general indications. The drugs most used were Rhodo., Nat. mur., Osmium, and Lachesis, using Gelsem., whenever she had an attack of pain, etc. The next attack was in September, 1881; the second in March, 1882, in connection with an ulcerated tooth; the third in April, 1886; and the last in April, 1887. Since then there has been no recurrence. The vision is $\frac{15}{15}$ in both eyes with +18, and the visual fields are normal.

"Other cases in which I have operated upon one eye, and glaucomatous symptoms have appeared in the other eye, have yielded very speedily to eserine and internal medication. As to remedies for glaucoma, especially acute attacks, Gelsemium has been my chief reliance, and I think it is more often indicated than any other drug, though in no disease is it more essential to individualize the case and prescribe upon the general symptoms; thus widely extending the range of drugs useful in this disease. As to special indications I have little to add to my conclusions to be found in the last edition of 'Ophthalmic Therapeutics' and in my article read before the American Institute in 1883 upon 'The Treatment of Glaucoma with Special Reference to Answering the Question 'Can Glaucoma be Cured Without Operation?'"

11. W. P. Fowler, M.D., Rochester, N. Y., jots down his experience as follows: "Glaucoma has been a comparatively rare disease in my practice. In fourteen years only sixty-four cases of primary glaucoma have come under my

care. This does not include several cases of absolute glaucoma and quite a number of patients suffering from glaucoma secundarium.

"The number treated with remedies before surgical measures were resorted to was forty-three. I cannot say that I have cured a case of glaucoma by the use of internal remedies. In several instances I have seen marked benefits from homœopathic treatment, and in three cases felt sure that a cure had been effected. But alas! time revealed to me my mistake, and in all of these patients iridectomy was finally found necessary.

"In prescribing for this disease I have always given the remedy that seemed to cover the symptoms. The potencies ranged from the mother tincture to the 200th. Gels., Apis, Bry., Phos., Ars., Bell., Kali iod., Coloc., Spig., Cedron, Merc., Phos. acid, and Rhodod. have seemed to do much for me in the way of relieving pain, checking the progress of the disease and clearing up the media.

"Have never seen any beneficial results from remedies in glaucoma simplex. It was principally in the prodromal stage of acute and sub-acute glaucoma that internal medication seemed to be of benefit. Gels. has done much for me in the way of clearing up the media. When severe pain was present, together with puffiness of the lids and more or less chemosis, Apis has been the most useful. This remedy has also done good service in clearing up the vitreous where no pain was present. Bryonia and Merc. cor. in alternation—and right here I will say that I very rarely give remedies in alternation—have proven of benefit in one case of sub-acute glaucoma."

The patient was a man, sixty-two years of age, bilious temperament, greatly depressed, in fact in a mental condition bordering on melancholia, with torpid liver and sluggish action of the bowels. When I first saw him he had been suffering for over a year from severe attacks of ciliary neuralgia that came on every six or seven weeks. The eyeballs had been very tender to touch and the pain was worse on moving the eyes. I found all the symptoms of glaucoma. T + 1, both eyes. L. V. = $\frac{20}{40}$, R. V. =

$\frac{20}{50}$. Visual field somewhat contracted, and slight cupping of the disks in both eyes. Pupils moderately dilated. Bry. was first given, and under it there was slight improvement. Merc. cor. 3 was, at the expiration of a month, given in alternation with Bry. 3, and with the happiest results. No further attacks of neuralgia were experienced, the bowels moved regularly, the mental condition improved, in short the patient felt well. These remedies were continued for three months. Six months later the patient returned with some pain in head and eyes. Once more these remedies were given, and again there was complete relief for nearly a year with V.$=\frac{20}{20}$. Then an attack of acute glaucoma suddenly came on. Bry. and Merc. were again given, also Apis, and other remedies, but with no benefit. I then made a large iridectomy in both eyes. This was followed by complete relief, and vision rose from perception of light to $\frac{20}{30}$.

"Phos., like Gels., has been principally of use in clearing up the media. The same may be said of Kali iod. Cedron has relieved severe supra-orbital neuralgia, but Bry. has also been of service in such cases.

"Ars. has helped in several cases when the patients were greatly reduced in strength and flesh.

"I must say that in most instances internal medication seems to be of but little use in glaucoma. Many times, not the slightest benefit is obtained, and it is simply a waste of time to continue constitutional treatment and postpone making an iridectomy."

Here ends the list of quotations from the replies which have been received in answer to my circular letter of questions. As to my own experience, the only benefit that I have perceived from remedies has been in the relief of pain and in the clearing up of cases after iridectomy. Besides, I must say that in cases where eserine or pilocarpine has been used locally in connection with internal remedies, it is certainly a matter of doubt how much of the benefit can be attributed to the remedy that is administered internally.

Returning to the list of opinions from the various authors above given, it has been a matter of regret that they could not be put in statistical shape as originally intended. Our

friends of the opposite school of medicine hardly ever admit anything in favor of homœopathic therapeutics unless knocked down with a statistical club. But though I have failed to furnish my confrères such a weapon, it is still evident that internal remedies do play a prominent part in modifying and checking, though even for a short time, the progress of glaucoma.

This, however, is not satisfactory; such meagre results do not satisfy us when compared with the decided results that are yielded by the internal use of remedies in other diseases of the eye. And why, with our fertility of symptomatology, such a comparative sterility of achievement? Does it result from the imperfections of our materia medica, or is it that we fail to individualize our cases carefully enough? I believe both these causes are at work.

Let us take the first cause: When I began a synopsis of this article it was my intention to take all authentic provings of drugs and carefully compare the symptoms relating to the eyes with the various manifestations that are peculiar to glaucoma. In how many provings do you suppose I found careful records of the ocular symptoms according to exact methods? Where will you find records of ophthalmoscopic examinations, of tests of the visual acuity, of the extent of the field of vision and of the tension during the proving? Well! not in many records of symptomatology.

Now, for the second cause, do we fail to individualize our cases of glaucoma carefully enough? Yes, I fear that we do; but in answering this in full I must diverge a little to consider the nature of glaucoma. Glaucoma, to my mind, is undoubtedly a disease of neurotic origin. Whether a trophic neurosis or whether a vaso-motor neurosis is certainly a difficult question to decide, but I am inclined to attribute the manifestations of the disease to trophic influences exerted by modifications that have taken place in a trophic center. Whether this trophic center, or vaso-motor center if you prefer, be in the cervical region (as Dr. Terry might suggest), cannot be definitely decided as yet, but

wherever it may be, I believe that these modifications in the nerve center, these pathological changes in the trophic or in the vaso-motor nerve center, that controls the secretive processes of the uveal tract, depend for their origin upon diathetical influences. Not that I would return to the old "choroiditis diathetica" nomenclature, but that, in my opinion, to diathetical influences, hereditary or acquired, are to be attributed those quantitative or qualitative changes in the nerve center controlling intra-ocular secretion, that result in a loss of tone or in an inability to resist extrinsic influences, such as an abnormally firm sclerotic, a disproportionately large lens, etc. That is to say, in brief, if this loss of tone exists in a given case the extrinsic influences mentioned will cause a loss of balance between intra-ocular excretion and secretion, while if the nerve center controlling these functions were perfect it would be able, within certain limits, to resist all influences tending to disturb this balance.

And now that I hope I have made my ideas clear on the relations existing between diathesis and glaucoma, I wish further to say, that were our so-called antipsoric remedies more carefully proven, that is, proven under the supervision of a specialist capable of analyzing and developing every eye symptom that the drug might produce, I believe we would have opportunities afforded us for more careful *individualization* of cases. As it is we do our best in carefully judging the diathetical tendencies of each patient, according to our present knowledge; but until such remedies as Nat. mur., Thuya, Sulphur, Calc. carb., etc., are proven with especial reference to the advancement that has been made in ophthalmic practice, we will remain at a disadvantage in treating glaucoma with internal remedies and in prescribing according to the *totality of symptoms.*

THE RELATION OF NASAL DISEASES TO EYE TROUBLE.

BY E. J. BISSELL, M.D., ROCHESTER, N. Y.

The dependence of one organ upon another for the perfectly healthy performance of its function is a subject of great importance, and one in which careful study yields rich rewards. Recent investigations in the field of reflex neuroses have shed much light upon abnormal conditions not heretofore thoroughly understood and therefore improperly treated. We have learned that very slight departures from a normal standard are worthy of our attention, nay, must receive our attention if we are successful in relieving our patients. This is most forcibly illustrated in the various forms of heterophoria, even when slight in amount; and what oculist has not seen marked reflex symptoms produced by low degrees of ametropia, especially astigmatism. The nose as a possible causative factor in ear diseases, headache, palpitation of the heart, asthma, hay-fever, epilepsy, chorea, vertigo, and eye trouble is no longer a matter of speculation. Even slight deviations from the normal patency of the nose do produce reflex symptoms as certainly as do the eyes. It is time for oculists to recognize this fact and give due importance to it, while pressing their claim for the eye as a great center of reflexes. The most recent ophthalmic text-books have not given due credit to the facts presented by rhinologists as to the nose as a cause of eye troubles.

The object of this paper is to show that such an etiological relation does exist.

First, the blood supply of the two organs is such as to

favor the extension of trouble in one to the other. The anterior and posterior ethmoidal arteries are branches of the ophthalmic. The nasal or spheno-palatine anastomoses with the ethmoidales, and thus we have the entire mucous membrane of the nose in direct vascular relation with the eye and its appendages. The veins, of course, maintain this same relationship.

Second, the passage of inflammatory conditions through the nasal duct is not improbable.

Third, the nerve supply also brings them into very close relation, and helps to explain many of the subjective symptoms complained of by eye patients. The nasal nerve is a branch of the ophthalmic and gives off the long ciliary nerves which connect with the short ciliary. The infra-trochlear, also a branch of the nasal, supplies the lids, lachrymal sac, and conjunctiva. Through the sympathic nerves[1] the eye and nose are still more closely brought into relationship and many reflex eye symptoms are the result of vaso-motor changes. The recent experiments of François-Franck[2] show that nasal excitation leads to reflex vaso-motor dilatation of the head, and vaso-motor constriction of the rest of the body.

Let us now glance at eye troubles traceable to abnormal conditions within the nose. First, those most frequently observed can be classed under the head asthenopia. Pain after using the eyes a few minutes, especially in the morning. Photophobia and a weak feeling in the eyes as if the patient could not keep the lids open, worse in the morning. Smarting of margin of lids and slight hyperæmia of the conjunctiva, passing off in two or three hours after rising. While the pain on using the eyes may continue all day, I wish to call especial attention to the morning aggravation. No oculist should let this symptom escape his notice. We would reasonably expect the eyes to feel better in the morning after a night's rest, but I have found this symptom present in a number of cases and have relieved it by giving

[1] "Reference Handbook of Medical Sciences," vol. viii., page 508.

[2] *Journal Laryngology and Rhinology*, vol. iv., page 122.

proper attention to the nose. The morning aggravation is satisfactorily explained, I think, by the more complete nasal stenosis and consequent pressure produced by the swelling of the erectile tissue of the nose during the night. I have found these asthenopic symptoms present in quite a number of patients with otherwise normal eyes, but more frequently in patients with sufficient ametropia or heterophoria to explain the eye symptoms, and yet appropriate treatment for the eyes did not bring relief. In such cases I have been wonderfully assisted in relieving my patients by giving attention to some intra-nasal trouble. The nasal affections most frequent in my experience in producing eye symptoms have been hypertrophies of the turbinates and marked deviations of the septum; least frequent, polypi and adenoid tissue. Gruening [3] reports a series of two hundred cases of asthenopia, most of them relieved by nasal treatment. Maxwell[4] finds nasal catarrh a frequent cause of accommodative asthenopia. Bronner, [5] in an interesting article upon this subject, also reports a number of cases cured by intra-nasal treatment. Bosworth,[6] in his late work, refers to cases reported by Beverly Robinson, Cheatham, and others. Similar to the above conditions are certain cases of blepharospasm and twitching of the lids. In the case of a book-keeper who consulted me for an annoying twitching of the lids I found it due to complete stenosis of the middle and superior meati, the result of hypertrophy. John Noland Mackenzie [7] says that he has seen several such cases.

Second in point of frequency are derangements of the lachrymal apparatus. These are of two classes, (*a*) epiphora due to mere excitation of the lachrymal gland; the sac and nasal duct being normal. This symptom was especially marked in a patient that I operated upon for synechiæ of the septum with the inferior turbinated bone. The opera-

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[3] *American Journal of Ophthalmology*, vol. iii., page 302.

[4] *Annual of Universal Medical Sciences*, 1889, B. 128.

[5] *American Journal of Ophthalmology*, vol. vi., page 325.

[6] Bosworth—"Diseases of Nose and Throat," vol. i., page 190.

[7] "Reference Handbook of Medical Sciences," vol. v., page 234.

tion relieved the epiphora. Lubet-Barbon[8] (Paris) reports cases of this character from hypertrophy of the inferior turbinate and recommends the galvano-cautery. Betman[9] of Chicago also reports six cases.

Blennorrhœa of the sac and stricture of the nasal duct. In many cases I believe these conditions to be due to direct extension of a congestion of the nasal mucous membrane into the nasal duct. I have had four cases in which the performing of Bowman's operation and passing of probes for some time was not attended with good results until I reduced the hypertrophied turbinates, and then the cures were perfect. Faravelli and Kruch[10] report that out of thirty-five cases of chronic lachrymal trouble they found thirty which they considered due to impairment of the nasal mucous membrane or deflection of the septum. Gruhn[11] records thirty-eight cases of dacryocystitis; in thirty-four of which there was coexisting nasal trouble.

The third group of eye troubles can be considered as reflex circulatory disturbances, such as iritis, conjunctivitis, keratitis, blepharitis, congestion of the optic papillæ with diminished vision, and even glaucoma. Last year I treated a gentleman with phlyctenular conjunctivitis for a long time without any good results until I corrected a deflected septum. I have also had two cases of mild blepharitis caused from nasal inflammation. J. N. Mackenzie,[12] in referring to this class of cases, says they are generally explained by the inflammatory process passing through the nasal duct, but that he believes that often they are a vaso-motor phenomenon. Ziem[13] reports two cases of iritis from nasal suppuration. Cheatham[14] says he almost daily meets with conjunctivitis and keratitis, especially the phlyctenular form, which do not yield to treatment until after an existing

[8] *Journal of Laryngology and Rhinology*, vol. iv., page 24.

[9] *Journal of Amer. Medical Association*, May 7, 1887.

[10] *Annual of Universal Medical Sciences*, 1889, vol. iv., D. 5.

[11] *Annual of Universal Medical Sciences*, 1889, vol. iv., B, 128.

[12] "Cyclopædia of Diseases of Children," vol. ii., page 334.

[13] *Annual of Universal Medical Sciences*, 1884, vol. iv., B. 127.

[14] *American Practitioner and News*, 1886.

nasal catarrh or eczema of the nose is relieved. Lenox Browne[15] reports a case of glaucoma not benefited by an iridectomy, but cured by removing a nasal polypus.

As yet I have not observed any cases of impaired vision that I could refer to intra-nasal trouble. But Ziem[16] reports six cases of diminished vision with venous hyperæmia of the papilla, relieved or cured by treatment for the nasal affection. He also records three cases[17] of impaired vision following the use of the galvano-cautery within the nasal cavity. Schmidt-Rimpler[18] had a case of unilateral blindness following the removal of nasal polypi. Other authorities have also reported cases.

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[15] "The Throat and its Diseases," London, page 507.

[16] *Journal of Laryngology and Rhinology*, vol. iv., page 72.

[17] *American Journal of Ophthalmology*, vol. iv., page 166.

[18] *Annual of Universal Medical Sciences*, 1889, vol. iv., B. 128.

INCIPIENT CATARACT.*

BY E. W. BEEBE, M.D., MILWAUKEE, WIS.

Homœopathic specialists are frequently consulted by persons suffering from incipient cataract, and as our authorities do not speak very positively concerning their treatment, there are those in our profession who are at a loss to know what course to pursue in the management of such cases, and it is to such that the following is more particularly inscribed.

Can we with justice to ourselves and our patients withhold from them the real facts and proceed to treat them medicinally, or shall we shock their sensibilities, blast their hopes, and thereby lessen their chances for receiving benefits which might otherwise accrue, by informing them at once of their true condition?

So positive are certain members of our profession that no advantage can be gained by such a course, that if we adopt the former, and what seems to be the more humane, policy, and such patients afterward pass into the hands of one of these doubters, we will undoubtedly be subjected to censure, either for gross ignorance in diagnosis, or for mercenary motives, in undertaking a cure by remedies administered internally.

Are we justified, in the light of our present knowledge, in attempting to ward off approaching blindness by conscientious treatment or shall we follow in the footsteps of the shining lights of allopathy, and render the only consolation possible (from their standpoint) by informing the patient

* Read before the American Institute of Homœopathy, June, 1890.

at once, that, if life be sufficiently prolonged, the time will probably arrive when blindness will result, with the possible hope that after remaining thus for an indefinite period, vision may be more or less restored by the aid of the surgeon's knife? Certainly not a very encouraging prospect for the average man of business.

Shall we as homœopathic physicians attempt to do more than they, and thereby place ourselves in a position where we will be likely to receive their condemnation for making an effort to relieve these sufferers by means of judicious treatment?

They admit their inability to afford relief in these cases by the aid of drugs, and they are emphatic in their expressions of unbelief in every form of medication or treatment which promises to alleviate or ward off approaching blindness, but the time has undoubtedly arrived, when we no longer need hesitate to prescribe for such patients because the experience of the past has left no encouraging word for our friends of the old school; neither should we be deterred from making the effort for fear of their criticisms, for we have abundant proof that homœopathic remedies have occasionally cured cataract in its earlier stages, and in numerous cases have they been instrumental in checking its progress when carefully selected in accordance with Hahnemann's law, and inasmuch as we do not lessen the chances for a successful extraction if other means fail, we are surely justified in withholding for the time being the exact knowledge of the impending trouble, and offering the patient a reasonable hope of benefit by means of a careful, but possibly a somewhat protracted, treatment.

But two conditions are necessary to successfully combat this much to be dreaded affection: First; patients must present themselves for treatment on the first appearance of opaque lens fibers: Second; it is necessary to individualize cases and to carefully select our remedies to meet the peculiarities of each particular case.

When these conditions are carefully complied with, we can offer a reasonable assurance that further progress of the

cataract will be checked, which in such cases is equivalent to a cure.

If, however, treatment be delayed until the lens substance has become more or less opaque, and vision greatly impaired, treatment will be disappointing; or if one expects to find a specific remedy for the many varieties of the affection and to use it indiscriminately, or without due regard to causes and conditions, he will undoubtedly arrive at the same conclusion that our friends of the old school have, and denounce those who advocate treatment by remedies administered internally as fit subjects for a lunatic asylum.

When, however, sufficient care is given to the selection of our remedies, I know of no other condition which is so serious in its results when neglected, that is easier of management than this: but we must never lose sight of the fact that the opacity of the lens substance is *not* the disease; that it is but a single symptom of a diseased condition, and is the result of such abnormal state.

It must also be remembered that there are various conditions which under favorable circumstances may induce this affection; when this fact is firmly fixed in the mind and its many causes duly considered, we will no longer seek for, nor expect to find, a specific for opaque lens fibers.

It is generally conceded that the immediate cause of the opacity of the lens substance is defective nutrition; this is undoubtedly true, and if we take the necessary time and care to examine these patients thoroughly, we will find them more or less diseased, and suffering from a train of symptoms which will satisfactorily account for their condition, and which will also lead with certainty to the selection of the homœopathic remedy.

In the treatment of incipient cataract homœopathy shows its superiority over every other known method of therapeutics; no two cases being alike, the accompanying symptoms must be our guide in the selection of our remedies, however slight they may be; experimental methods based upon pathology are unable to meet the peculiarities of these cases; hence the failures of our friends of the dominant

school, for unlike many diseases which have a tendency to recover without the aid of medicines, this, in the great majority of cases, steadily progresses with greater or less rapidity until blindness obtains.

Aside from such causes as scrofula, rickets, convulsions, and hereditary syphilis in the young, diabetes and lithæmia in the adult, are probably the most frequent; the latter I believe is especially accountable for the majority of these cases appearing in those beyond the age of fifty years; and in order to be successful in the treatment of these they must be placed under proper hygienic conditions, with diet carefully regulated, and a sufficient amount of daily exercise enjoined. This condition is one which is now recognized as the chief cause of a large proportion of our chronic diseases, and its peculiarities can be studied with profit by every one interested in the treatment of the sick.

Surprising results frequently follow the administration of the indicated remedy in incipient cataract, and the improvement thus obtained is quite as permanent as that experienced in other chronic affections. In a paper which the writer had the honor to present to the Wisconsin State Homœopathic Medical Society three years since, several cases were detailed which had been successfully treated at periods varying from three to ten years previously, and so far as I have been able to learn, these still retain the benefits received at that time.

Several cases have been treated during the past year with gratifying results to the majority; of these but two or three will be mentioned to indicate the improvement in vision which is sometimes obtained.

Mrs. H. C——, aged forty-eight, a well-known modiste of the city of Milwaukee, consulted the writer on May 21 for failing sight. On examination she was found to be suffering from incipient cataract, the lenses of each eye presenting the well-marked peripheral fringe of opaque lens fibers, with vision in left eye of $\frac{13}{40}$, in the right somewhat less. On July 13 her vision had increased to $\frac{13}{20}$ in each. Since that time she has had no treat-

ment, and no cause for further complaint; the opaque fibers are still to be seen, but less distinctly.

Mrs. A. L. W——, aged seventy years, on March 25 called at my office to be fitted with spectacles. Incipient cataract was diagnosed and treatment advised; vision in right eye $\frac{13}{100}$, in left $\frac{13}{40}$. May 26, after two months' treatment, vision for right eye had increased to $\frac{13}{40}$, and that of the left to $\frac{13}{20}$.

Mrs. S. C——, aged forty-five, April 23 presented for examination, with vision in right eye $\frac{13}{70}$, in left $\frac{13}{40}$. Commencing cataract was discovered and treatment suggested. May 30, vision of right eye was $\frac{13}{50}$, and that of the left $\frac{13}{70}$.

These are sufficient to show what may be done in these cases when one has confidence in his remedies and prescribes them in accordance with our well-known law.

Local treatment is of manifest advantage, and it is to be recommended in conjunction with the remedies given internally. Among the best of such applications hot fomentations are to be commended, and if there is a tendency to conjunctival inflammation a few drops of some mild astringent may be added with evident advantage.

Galvanism is an agent which the writer habitually uses, but is not altogether certain that it has any advantage over other local irritants which determine the blood to the surface; it is probable that chloral, cantharis, or mustard, used in a similar manner, would give as good or possibly better results.

Dry cupping is of undoubted value in these cases and its occasional use is to be recommended.

It is not my purpose to make this report complete or exhaustive, but to indicate simply what may be done with homœopathic remedies in one of those affections which is considered not only incurable by our friends of the old school, but which does not admit of relief at their hands, and I earnestly hope that it may be the means of stimulating further efforts in the same direction; and that at the next annual gathering of this Society a report may be made upon this subject embodying the experience of each individual member interested in our special work.

A LARGE FOREIGN BODY IN THE ORBIT AND NASAL CAVITIES FOR NEARLY THREE YEARS, GIVING RISE TO BUT LITTLE INCONVENIENCE.*

BY D. A. STRICKLER, M.D., ST. PAUL, MINNESOTA.

History: Charles C., æt. forty-two, laborer, in August, 1887, while loading edgings in a saw-mill, at the end of a chute eighteen or twenty feet in length, was struck by a piece six or eight feet long. The force of the blow knocked him down, but not senseless. Severe pain in the right eye and in the head followed immediately, and the lids soon swelled shut. He does not know that sight was lost immediately, but two or three days later, on separating the lids, he found he could not distinguish daylight from darkness. This total loss of light perception has lasted ever since.

The injury was found at the inner side of the right orbit, internal to and a little above the caruncle, passing through the upper lid. He was treated for about three months, during which time some operation was performed, the nature of which he does not know. At the end of that time he was free of pain, and, though the lids were swelled shut and the wound constantly discharging, he gave up treatment. The conditions remained the same, with occasional spells of pain and constant discharge, until about the 15th of April, 1860, when the eye became painful and the wound angry, compelling him to seek further advice. He consulted Dr. Dockstader of South Park, St. Paul, who found a hard body presenting at the wound in the upper lid. Enlarging the wound by a free incision he succeeded in removing a piece of wood measuring 2½ inches in length, 1 inch in circumference at its smaller end,

* Read at American Institute of Homœopathy, June, 1890.

and $1\frac{1}{2}$ inch at its larger end: being $\frac{5}{8}$ inch broad on its broadest surface. Its smaller end entered first. The removal of the wood ended the pain. In syringing the wound, water found its free entrance into the nose and throat.

May 14, 1890, the patient was brought to me for examination and treatment, when the following conditions were noted. A wound at the inner side of the right orbit, extending backward, inward, and slightly downward to a depth of a little more than two inches. The wound was found to communicate with both nasal cavities, so that in syringing the water came from both nostrils freely, bringing with it quantities of thick pus. At the vault of the pharynx on the left side, above the eminence for the Eustachian orifice, were found cicatricial bands, having the appearance of mouths of sinuses. There was no perception of light in the right eye, while the patient was unable to turn the eye outward beyond the median line, or upward. Haziness of the cornea opposite the pupil prevented satisfactory examination of the fundus or media.

The wound has been treated by free syringing with listerine in water: the solution entering through the wound in the lid, and discharging freely through both nostrils. When last seen, June 6, the depth of the wound was $1\frac{1}{8}$ inch, the discharge greatly diminished in quantity.

From the direction of the wound and the length of the piece of wood, it must have broken through the os planum of the ethmoid, the septum nasi, and its inner end lodged in the sphenoidal sinus. That it did take such course would be evidenced by the communication with both nasal cavities, and the remains of sinuses toward the left side of the vault of the pharynx. These sinuses must have been open when the stick was first removed, as the doctor says the throat filled with water, although the head was tilted forward.

The case is remarkable in that such a large foreign body should remain so long in the flesh and give rise to so little inconvenience. I believe the drainage through the nose and throat is the secret of its long tolerance. In this connection, he gives the history of yellow discharge from the nose and throat during its presence. Not much weight, however, can be attached to this history of catarrh as bear-

ing on the tolerance of the foreign body, as the patient is not a close observer, and slight catarrhs are the rule rather than the exception in Minnesota.

The present condition which strikes me as most peculiar is inability to turn the eye outward or upward, while the seat of injury was at the inner side of the orbit, the track of the wound being inward, downward, and backward. Will some one kindly give the reason?

PHYSIOLOGICAL ACTION OF THE EPIGLOTTIS.*

BY HORACE F. IVINS, M.D., PHILADELPHIA, PA.

It is not the object of this paper to give an account of the action of the muscles which control the epiglottis but rather the results of such muscular contractions, and while there may be little that is absolutely new in this respect, it is hoped that some points will be recorded which may, at least, savor of novelty. The well-known points are so few that I venture to repeat them for the sake of comparison and completeness. Dunglison says: "The special use of the epiglottis would seem to be to cover the glottis accurately at the moment of deglutition, and, thus, to assist in opposing the passage of alimentary substances into the air tubes." Gray, in his anatomy, p. 171, says: "During respiration, its direction is vertically upwards, its free extremity curved forwards toward the base of the tongue; but when the larynx is drawn up beneath the base of the tongue during deglutition, it is carried downwards and backwards, so as to completely close the opening of the larynx." Yeo, "Manual of Physiology," p. 116, in speaking of the elevation of the larynx during deglutition, says: "The rima glottidis is thus tucked under the cushion of the epiglottis, while the leaf of the epiglottis is pulled down over the larynx by the oblique aryteno-epiglottidean and thyro-epiglottidean muscles." Cooper, "Dictionary of Practical Surgery," published in 1830, in referring to this subject records a case that occurred in the practice of Baron Larrey in 1801, in which the epiglottis was shot away. "When he

* Read before the American Institute of Homœopathy, June, 1890.

first attempted to swallow," continues Cooper, "he was seized with a convulsive suffocative cough attended with vomiting"; four days later Larrey fed him through a soft rubber œsophageal tube, as the man was unable to swallow and was losing strength. He was thus fed for six weeks, when he was able to swallow, "in consequence, as Larrey imagined, of an enlargement of the arytenoid cartilages, and an expansion of that part of the base of the tongue which lies next to the glottis having formed a sort of substitute for the epiglottis."

It would thus appear that previous to 1830 the epiglottis was considered the only bar to the passage of food into the larynx during deglutition, but it is now well known that the sphincter muscles of the larynx, aided by the elevation of the larynx under the tongue and hyoid bone, perform this function very satisfactorily in the absence of the epiglottis, and it was no doubt this action which occasioned the relief to deglutition in Larrey's case after the subsidence of the inflammatory condition. If in good condition these sphincter muscles alone are usually sufficient to guard the portal of life, provided the mucous membrane of the superior portion of the larynx be in such a condition as to warn of the approach of any substance which might do harm.

Harrison Allen, "Human Anatomy," p. 682, says: "The epiglottis is an accessory to the closure of the glottis, and also aids in directing the mucus expelled from the trachea into the mouth."

If we accept Allen's statement, we must look upon the epiglottis as a secondary consideration in the prevention of laryngeal foreign bodies, the chief function thus devolving upon the sphincter muscles and the elevated position of the base of the tongue; this it seems to me is the correct view. Ellis and Ford, "Illustrations of Dissections," vol. i., p. 204, say: "This valve is employed in closing the laryngeal opening during deglutition. And when placed over the opening during the production of vocal sounds it causes the pitch of the note to be lowered." This, again, bears upon

the influence of the epiglottis on tone-production. It may be noted, in brief, that this depression of the epiglottis during long-continued speech is the source of much pharyngeal, laryngeal, and vocal disturbance, as noted in those who use a "throaty" method of voice production, or imitate the "profound orator," or the "stage villain."

As a rule, throat works add little to the preceding, except to note the motion of the epiglottis during respiration and the decided changes and excursions which it makes during the production of different tones and vowels. In this connection we read, "Voice, Song, and Speech," Brown and Behnke, p. 78:

"It is quite plain from the foregoing considerations that the lid is the means of more or less suddenly and abruptly turning the tone-waves and of directing them under one angle or another against the back of the throat whence they are reflected into the mouth. We are therefore justified in concluding that the lid has some considerable influence upon the quality of the voice. It may thus be the cause of certain characteristics which enable us to recognize the voice of a friend though we do not see him, and it may also account for some similarities of voice which we find in many families, just as there are similarities of features. We put this forth, to a considerable extent, as a matter of conjecture, which has nevertheless sufficient foundation in fact to be interesting as a problem in the production of voice which may one day be satisfactorily solved."

Here we find a wide divergence from the straight and narrow path already trodden, but in it there is much for future consideration, and much that has already been weighed in the balance of practical test and found of undoubted value; on the other hand there is one statement (reserved) to which I cannot subscribe, for I have carefully noted the "characteristics" of the epiglottis in those cases in which I have recognized great similarity of voice in either relatives or strangers, and while there were occasional epiglottic "characteristics," as a rule there was little similarity.

To the suggestion, "We are therefore justified in concluding that the lid has some considerable influence upon the quality of the voice," I most heartily agree, as I think will any careful laryngoscopic observer, if he note the special action of this little cartilage as the different sounds and pitches are produced, and the resemblance which these various mechanisms bear to each other, not only in the same but different subjects. This, however, only applies to those whose voices are fairly well cultivated, especially those who are well-trained vocalists and who employ an apparently good method of voice production. I will go further and say that the finished pupils of a special vocal teacher present this characteristic resemblance in a more pronounced degree than equally well-drilled pupils of different teachers. If, then, these changes be so generally noted it seems but natural to conclude that it can scarcely be the result of accident, but rather one of the immutable laws of Nature. In order to understand this method of voice production it should be studied from the standpoint of a laryngoscopic observer; thus is added one more cause for the dictum, the vocal teacher should be a good laryngoscopist as well, or, taking an extra step, let me say that the pupil should be made familiar with the observed action of the epiglottis as revealed during the production of his teacher's tones, especially when the instructor finds it difficult or impossible to get his pupil to imitate the tone desired, that is to say, its finer shadings. With these outline thoughts let us pass to other uses of the epiglottis.

Meyer, "The Organs of Speech," p. 30, says: "Opposite the soft palate is situated another valve, which rises as an elastic, rigid plate of a tongue-like form from the upper margin of the entrance to the larynx. This is the epiglottis; it lies close to the lower and most posterior part of the dorsum of the tongue, and runs upward so far as to almost come into contact with the free margin of the soft palate. These two valves, if not absolutely, yet quite sufficiently, shut off the cavity of the mouth from the pharynx, the gap which is left between them being practically closed by the arched

position of the dorsum of the tongue, so that the closure may be regarded as complete. This, however, is the only case when the mouth is closed." On p. 66, after comparing the epiglottis to a spoon, the bowl of which he calls the plate and the handle the stem, he says: "Now the stem of the epiglottis is inserted in the middle thyro-hyoid ligament, so that its axis lies in the direction of the fibres of the ligament. From this arrangement it follows that, as long as the larynx is suspended by this ligament, when the latter is necessarily stretched, the stem is held in a vertical position. The plate then ascends behind the body of the hyoid bone, its broadest part forces its way through the slit [vestibule of the larynx] and so separates its margins, just as the margins of the glottis are separated by its broad attachment to the plate of the cricoid cartilage. Thus the entrance from the pharynx into the larynx is always open, its form being that of a triangular slit, the base of which faces upwards toward the epiglottis. We must remember that this is not the only function of the epiglottis, but, stretching upwards into the free cavity of the pharynx, it acts at the same time as a valve, which, according to its position, can either close the entrance to the cavity of the mouth or that of the larynx." It must be remembered that this action of the epiglottis is only secondary to the natural dilating influence of the aryteno-epiglottidean folds and their contained cartilages.

In concluding, there is one special personal observation which I wish to record. It consists of the action of the epiglottis in dislodging discharge from the upper part of the larynx, not a true cough but a "clearing of the throat." In this action the vocal ligaments closely coapt; the ventricular bands approach but do not touch each other; the cushion of the epiglottis and the folds of tissue about the anterior portion of the laryngeal vestibule push directly backwards so that they come within nearly two lines of the advancing cartilages of Santorini, and the epiglottis remains erect but is slightly "dipped" as its lower end is forced backwards. As soon as air passes the glottis lips, owing

to slight muscular relaxation, the suppressed (*sotto voce*) cough is heard and the parts instantly resume their usual positions, but the vocal bands at once rebound, without, however, coming in contact. This position is retained a few seconds when the bands settle back into their normal respiratory activity. This action on the part of the epiglottis is very different from that noted during a true cough, when the leaf usually descends as a preliminary step to the forcible expirato-explosive blast.

CLINICAL CASES.

B. B. VIETS, M.D., CLEVELAND, O.

CASE I.—Mr. C——, twenty-three years old, was taken on the 6th day of January last with a severe pain in the left ear. After suffering two days he consulted a specialist, who examined the ear but did nothing for it—telling the patient it would soon be better. After five days more of suffering he consulted a physician, not a specialist, who realizing the gravity of the case made an attempt to puncture the drum-head, but failed, probably on account of the swelling in the canal. For the next three days poultices were used constantly, when the ear began discharging, and the sufferer was relieved of his pain. For eight weeks, following this, the ear was syringed three times daily with water as hot as could be borne, the discharge increasing all the time. The second week in March I first saw the case. Upon examination I found the outer two-thirds of the auditory canal swollen and very tender; the inner third filled with granular masses. No view of the membrana tympani could be had. Patient was pale, haggard looking. The discharge from the ear I have never seen equaled in amount. For ten days previous to my examination the man had suffered agony from a pain directly over the left eye, and a small spot upon the side of the head about three inches above the left ear. Treatment was directed to the destruction of the granulations. Five days after, a view of the membrane was had, a saturated solution of the bichromate of potash having been used. About two-thirds of the membrane was destroyed. As the usual treatment of these cases did not relieve the pain, or materially lessen the amount of the discharge, I determined to open the mastoid cells, although at this time there was no pain or tenderness in this region, though the tissues immediately back of the ear were somewhat swollen and boggy. A free

incision was made to the bone, which was found—to my surprise—to be neither denuded or even roughened. With a drill the mastoid cells were opened, when there was a free discharge of pus. In one week the patient was asking to go back to his work. But at this time he took a severe cold, and in twenty-four hours he was in bed. Temperature 104½°; pupils largely dilated. The whole side of the head and neck were swollen till the appearance was as if patient were having a severe attack of mumps. The pain over the eye and in side of the head had returned, causing such suffering that morphia was administered. After three days poulticing night and day, a puncture was made at the base of the skull about half-way from the attachment of the auricle to the occipital protuberance; no pus was found. Poulticing continued two days more, when through an incision three inches long and two deep, at least a teacupful of pus gushed out. Prognosis now, thirteen days after last operation, very favorable. Carbolized water thrown with a dental syringe into the opening into the mastoid cells flows freely out of the ear, the nose, into the throat, and out of the incision at the base of the skull. Unless we get some further complication patient will be discharged probably in two weeks.

Case II.—In July, 1888, I was called upon to treat the eyes of a lady sixty-five years of age. She complained of dimness of vision of the right eye, and watering of the eye. Upon examination I found stricture of both the nasal ducts. The ophthalmoscope revealed the cause of poor sight of the right eye, in a partly developed cortical cataract. The periphery of the lens was principally involved, though very numerous opaque lines extended toward the center of the lens. Every day or two for three months the lady came to my office for treatment of the duct. Almost daily with my ophthalmoscope I watched the growth of the cataract, which was very slow. In November, patient was discharged; the stenosis of the ducts cured. Last Saturday I examined the eyes for the first time since November, 1888, expecting to find a mature cataract. But the most careful examination with the ophthalmoscope and oblique illumination failed to reveal even the slightest opacity, or even the hazy condition of the lens often noticed in patients of that age. Vision has returned, being nearly as acute as the other eye. Whether treatment of the ducts

in any way influenced this process of retrograde metamorphosis, I do not know.

CASE III.—Mrs F., sixty years of age, two years ago was seen by Dr. Strawbridge, of Philadelphia, Pa., at the Wills Eye Hospital. His diagnosis was mature senile cataract, and he advised immediate removal. Several of the oculists connected with the hospital saw the patient and examined the eye. I saw the case a few weeks later. Patient's sight was reduced to the perception of light only in this eye. I made iridectomy preparatory to removing lens. Patient was to return to the city in two weeks for second operation. In about five weeks she returned able to make out the form of objects quite distinctly. The operation was postponed. In five months vision was $\frac{12}{20}$. To-day she sees to read with this eye and has a pretty well-developed cataract in the other eye. In making iridectomy the lens was not injured—causing absorption and removal of the cataract in this manner. The lens remains perfect in form, and with the exception of slight opaque spots is transparent, as is evidenced by her ability to read.

CASE IV.—Mr. ——, coachman, suffering from a deep corneal ulcer, located just above the center. The eye had been affected four weeks when I saw it. Equal parts of a 1 gr. solution of atropia and a 4 per cent. solution of cocaine were prescribed, to be instilled every three hours. A pressure bandage was carefully applied, Hepar sul. 3x given internally. At the end of a week no improvement. Arsenicum 3x was substituted for the Hepar sul. In three days eye worse. Mercurius then tried one week. Patient no better ; the only change noticed was in the reparative vessels running from the limbus to the ulcer. These vessels could be seen when I took the case, but now they were a little more noticeable. There was severe photophobia, profuse lachrymation, and intense pain. The scleral conjunctiva was as hyperæmic as we get in conjunctivitis. The bandage was again applied. Same local measures continued. Aurum met. 3x given. In forty-eight hours there was no pain or lachrymation, but slight photophobia, no redness excepting very little pericorneal injection ; base of the ulcer had lost its dirty yellowish appearance ; on the fourth day patient came in saying he would defy me to tell which was the sore eye. Aurum cured that case in four days.

THREE CASES OF INTUBATION OF THE LARYNX.

BY J. W. MEANS, M.D., TROY, O.

Intubation of the larynx for membranous or diphtheritic croup, or stenosis of the larynx from any cause, is rapidly gaining adherents. The great advantage of intubation over tracheotomy is apparent to any one, when the two systems are compared. I give my experience in three cases occurring in my practice within the last three months.

Was called, February 2, eight miles into the country to see a case of diphtheria; the physician in charge, having notified the parents of the afflicted child of the gravity of the case, asked for counsel. I found a little girl six years old, with a diphtheritic membrane covering the fauces and tonsils, and extending into the roof of the mouth; she died the ninth day from extension of the membrane into the larynx.

Two days later a child two years old, in same family died of asphyxia from extension of the diphtheritic membrane into larnyx.

The only remaining child in the family, (Case I.), a girl seventeen years old, was violently attacked with diphtheria. On the fifth day, laryngeal complications developed; on the sixth day the consulting physician concurred in my opinion that all hope was gone. Chagrined at my helplessness in such cases, I concluded to send for Dr. O'Dwyer's tubes and accessories, and if possible save my patient. Twelve hours later I was with the patient and supplied with the necessary implements. I found her almost asphyxiated. After a few ineffectual efforts, I succeeded in introducing the largest sized tube (No. 6) into the larynx. Immediate relief followed. After remaining in position twenty-four hours,

the tube was coughed up, but no more difficulty in breathing followed. She made a slow but good recovery.

CASE II.—Was called, Feb. 20, to assist Dr. W. P. Williamson perform laryngotomy on a child five years old, for the removal of a metal clasp from the upper part of the larynx. The foreign body had been in position four weeks. All attempts to remove it, though made by a number of physicians, were fruitless, until it was finally removed by the operation above named. No untoward symptoms developed until the tenth day after the operation, when difficult breathing, caused by inflammatory deposits at the seat of the original injury, gradually supervened. Dr. Williamson was summoned, and all available means were used to relieve the oppressed breathing. At 2 o'clock A.M. I was telephoned to come immediately (18 miles) and bring intubation instruments. I arrived two and a half hours later, and found the patient cyanotic, pulseless, in fact dying. I immediately introduced the proper tube, and to our great satisfaction the little sufferer breathed easy, and soon regained her normal state. The tube was removed on the sixth day following; but was replaced two days later, as the breathing became impaired. For twenty days the tube remained in position, the child becoming strong and healthy, no inconvenience from the tube resulting. Again the tube was removed, but immediately replaced, as breathing was impaired. At this period in the history of the case, the parents selected a bright, crisp April day to make a visit twenty miles distant, in an open buggy; on their return home the child had a chill, developed pneumonia, and died four days later. The tube was never removed. I have no doubt but that the abnormal thickening of the upper part of the larynx would have been restored to a normal state in time.

CASE III.—April 25, was hurriedly summoned by Dr. Patty to see a case of membranous croup; boy, seven years old; had been in a critical condition for forty-eight hours, pulse 140, intermittent, great prostration, cyanotic and speechless. I immediately introduced an O'Dwyer tube, and in a few minutes the boy was normal in appearance, breathing well, and seemed likely to recover; but pneumonitis rapidly followed, and the child died three days later, with both lungs hepatized. The tube was removed a few hours before death. No croupal symptoms developed.

The question is asked, what have we gained by intubation? I would say that the first and second cases were evidently cured by intubation; true, the second case died before a cure was positively established, but the untimely death from pneumonitis, due to exposure, was in no way influenced by the condition of the larynx or the treatment.

The third case I confidently assert could have been saved had intubation been resorted to thirty-six or even twenty-four hours earlier. I would therefore advise early intubation in all croupous forms of stenosis when there is any doubt as to the efficacy of remedies.

THERAPEUTICS AND CLINICAL DATA OF DISEASES OF THE NOSE, THROAT, AND LARYNX.

BY J. A. TERRY, M.D., NEW YORK CITY.

THE NOSE (*continuea*).

CINNABARIS.

PATHOLOGICAL INDICATIONS.—Chronic and subacute nasal catarrh. Syphilitic rhinitis. Post-nasal catarrh. Ozæna.

CLINICAL.—Lumps of dirty yellow mucus are discharged from the posterior nares (L.). Coryza, with lameness of the thighs and aching in small of the back. "Nasal catarrh, subacute and chronic, with pain about the root of the nose, extending into the bones on each side."—*Allen.*

CHARACTERISTIC.—"*Sensation on bridge of nose as if touched with a metal.*" "*Uneasy creeping and pressive sensation about ossa nasi, as from heavy spectacles.*" (Comp. Kali bich.)

COLCHICUM.

CLINICAL.—Extremely acute smell, especially for the odors of cooking; the smell of food being prepared causes nausea and disgust for food, indeed all strong odors are oppressive. These symptoms occur in the course of many diseases, gout, dysentery, etc.

CORALLIUM RUBRUM.

PATHOLOGICAL INDICATIONS.—Coryza. Epistaxis. Ulceration of wing of nose (right). Post-nasal catarrh.

CLINICAL.—Painful ulcer in right nostril, sensation as if the nasal bones were pressed asunder. Violent coryza, dis-

charge resembling molten tallow. Profuse secretion of mucus through posterior nares, obliging to hawk frequently. Epistaxis from one side (at night), (Calc. right side).

The author cured with Coral. 30 a case of chronic asthma in a plethoric and sanguineous woman, with dry, spasmodic cough, glairy expectoration, and subject to posterior nasal catarrhs with one-sided epistaxis. The case has remained well up to date.

CUBEBA.

CLINICAL.—Nasal catarrh, with fetid odor, and catarrh of the throat, with greenish yellow expectoration of fetid odor. In catarrh of the throat the mucus trickles from the nose into the throat, is greenish yellow, with rawness of throat and hoarseness. (Comp. Sinapis and Hydrastis.)

ELAPS.

PATHOLOGICAL INDICATIONS.—Naso-pharyngeal catarrh. Epistaxis. Obstruction. Ozæna. Anosmia. Fluent coryza. Chronic rhinitis. Plugs and scabs.

CLINICAL.—Subject to nosebleed, eruption about nose, pain in nose and forehead, skin dry and hot, but complains of feeling cold.

Stoppage of nose high up and dull aching in forehead, bad smell in nose, pharynx scabby, cracked and dry; nosebleed, pain from root of nose to ears on swallowing, no smell.—*Allen.*

Chronic ozænas and nasal catarrh complicated with obstruction in breathing, plugs of dry mucus, scabs greenish or blood-streaked, pain at the root of nose, and anosmia.

EUCALYPTUS.

Cures chronic catarrh of nasal passages and acute coryzas. In the form of Eucalyptol is applied locally with glycerine or vaseline as disinfectant in ozænas. Its principal action is in the larynx. Cases of membranous croup which would not yield to Acon., Spongia, and Hepar, have been cured by the writer with Eucalyptus φ in malarial districts. Twenty-eight cases of croup have been cured with this drug in one of the children's hospitals of London.

EUPATORIUM PERFOL.

PATHOLOGICAL INDICATIONS.—Coryza. Influenza.

CLINICAL.—Whenever an acute, violent coryza or an attack of influenza is accompanied with *severe bone-pains*, *soreness of eyeballs* and *heaviness of head*, it will be a characteristic and strong indication for the employment of this remedy.

EUPHRASIA.

PATHOLOGICAL INDICATIONS.—Coryza, acute and generally with conjunctivitis.

CLINICAL.—The acute, fluent coryza, with much sneezing, lachrymation and photophobia, usually is complicated with conjunctivitis. The discharge from the nose is bland, while that from the eyes is acrid and smarting.

CHARACTERISTIC.—"*Irritation to sneeze all day.*" "*Profuse fluent coryza in morning with much cough and expectoration.*"

FERRUM METAL.

CLINICAL.—Epistaxis. In anæmic and chlorotic individuals.

CHARACTERISTIC.—"*Bleeding in morning on stooping.*" "*Yellow face.*" "*Flushed face and cheeks burning.*" "*Lips pale.*"

FLUORIC ACID.

CLINICAL.—Chronic nasal catarrh and ozæna. Follows Silicea well. Red, swollen, inflamed nose with obstruction. A lachrymal fistula or a chronic inflammation of the lachrymal sac, worse in cold air, may be present as a stronger indication.

GELSEMIUM.

CLINICAL.—Nasal catarrhs, with excoriating discharge, *sore throat*, associated with physical weakness. Acute nasal catarrhs, especially in the summer, with inflammation of throat and pain extending into the ear, and deafness. Hay fever with the peculiar head symptoms of the drug.—*Allen.*

CHARACTERISTIC.—Disposition to catch cold at the slightest change in the weather. Neuralgias of the fifth pair of nerves. Ptosis. *Coryza with sore throat.*

GRAPHITES.

PATHOLOGICAL INDICATIONS.—Ozæna. Eczematous eruption (moist). Tendency to fissures and cracking of skin. Herpetism. Tendency to obesity. Erysipelas of face, with ulcers about the nose and mouth.

CLINICAL.—Nasal catarrh, frequently with dryness of the nose, *but great soreness*, with formation of scabs, a kind of ozæna with bad odor, the nostrils externally ulcerated, cracked in the corners and bleeding. Eczema about the nose and mouth, with cracks in the corners of the lips and wings of the nose.—*Allen.* Pimples or comedones on nose. Black pores.

CHARACTERISTIC.—" *Smell acute, cannot tolerate the smell of flowers.*"

HAMAMELIS.

PATHOLOGICAL INDICATIONS.—Epistaxis, either vicarious or idiopathic. Passive, venous epistaxis. Varicose condition of the small blood-vessels of nose and pharynx with easy bleeding.

CLINICAL.—Has cured diseases of the mucous membrane of the nose and pharynx when the condition of the vessels gave rise to repeated hæmorrhages.

HEPAR SULPH. CALC.

PATHOLOGICAL INDICATIONS.—For the extreme susceptibility of the system to catarrhal attacks (Comp. with Sulp., Graph., and Silicea). Ozæna. Ulcers on the schneiderian membrane. Syphilitic ozæna, caries and ulcerations when mercury or iodide of potash has been extensively used (Comp. Aur. and Nitr. ac.).

CLINICAL.—Inflammation of the nostrils, with great soreness of the nose, which is swollen and red, with profuse greenish-yellow discharge. Ozæna with soreness of the bones, heat, ulceration, nose very sensitive internally to air and to touch, discharge very offensive. (Puls., Kali iod., Graph.)—*Allen.* Catarrh renewed by every breath of wind, or *one nostril* affected. *Great sensitiveness to cold, or open air.*

HYDRASTIS.

PATHOLOGICAL INDICATIONS.—A *catarrhal* drug, with affinity for the mucous membranes with profuse discharges and ulcerations. In scrofulous children attainted with marasmus. Diphtheria of the nose (locally applied).

CLINICAL.—Nasal discharge, watery, excoriating, with burning, rawness of the throat. *Catarrh, mostly in the posterior nares, with obstruction, headache,* and the discharge *dropping in the pharynx.* Ozæna with bloody discharge; ulceration of the septum nasi, easily bleeding when touched. Yellow, greenish, offensive discharge in hypertrophic catarrh.

CHARACTERISTIC.—*Discharge of thick yellow matter.* "*The thick, tenacious secretion from post. nares dropping into the pharynx.*"

IODUM.

PATHOLOGICAL INDICATIONS.—Scrofulous constitutions. A swollen, painful nose accompanies generally the internal inflammation in chronic cases. The mucous membranes are as much affected as the glandular system.

CLINICAL.—A very valuable remedy in acute, fluent coryza; the discharge is hot, the nose becomes sore, headache at root of nose and over frontal sinuses; the attack is attended with fever, sneezing, etc. (Comp. Arsen.) In subacute and chronic catarrhs, discharge fetid, nose swollen and painful (Natr. m. and Aur.).—*Allen.*

Catarrh of the nose and Eustachian tubes, with thin, white discharge and stoppage of the nose.

CHARACTERISTIC.—"*Coryza, nose stopped up, < evening, becoming fluent in open air.*" "*Fluent coryza, glassy mucus, fluent like water, with much sneezing.*"

KALI BICHROMICUM.

PATHOLOGICAL INDICATIONS.—Erosions and ulcerations of the nose, throat, and larynx. The ulceration is usually round and deep, covered by hard, adherent scabs, which take the form of *clinkers,* and when detached show sore places or ulcers, on the mucus membrane. Nasal polypi.

CLINICAL.—Kali bichrom. has been employed in quite a variety of diseases of the nose. The formation of scabs, (clinkers), ulcerations of the mucous membranes round and regular, as if cut with a punch, and the tenacious, adherent secretions, form a characteristic group peculiar for its employment.

CHARACTERISTIC.—"*Pain at the root of nose*," with sensation of obstruction and swelling. "Pain extends to frontal sinuses, cheek bones, or around the eyes." "The nose is full of thick mucus, which turns into plugs or scabs."

(*To be continued.*)

N.B.—On page 164 of previous number, first line, where it says: "The remedy *par excellence*, for scrofulous children, etc.," it must be understood to belong to the next remedy, Calc. carb.

REST AS A FACTOR IN THE MANAGEMENT OF ASTHENOPIA.*

BY W. A. PHILLIPS, M.D., CLEVELAND, O.

Asthenopia, literally without strength of eye, is characterized by inability to use the eyes for near work without very soon producing a sense of fatigue. The feeling of discomfort, which will often merge into actual pain if the reading, writing, sewing and the like are long continued, may be in the eyes entirely, or may be principally over the brow, in the temple, or even in the occiput. After resting the eyes for a few minutes the use of them can be resumed for a time, when the former symptoms will be again produced and this experience may be indefinitely repeated.

The investigations that led up to a demonstration of the various causes developing asthenopia are no doubt the brightest to be found in the annals of ophthalmology, and the glory of the discovery both as to cause and correction—at least so far as errors of refraction are concerned—is due to the profound researches of Donders.

For the purpose of more systematic study asthenopia has been divided into *a*, accommodative; *b*, muscular; and *c*, retinal. In the first variety may properly be included all cases resulting from defect in the shape of the eyeball, giving rise to hyperopia, myopia, and astigmatism; and also the asthenopia that results from uncorrected presbyopia, which is the physiological change, principally in the lens, that gradually removes the reading point farther and farther from the eye as age advances.

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* Read before the Medical Society of the State of Ohio.

So far as the subject of asthenopia goes, the conditions of perfect vision are that the symmetry of the eye-ball shall be perfect and that the coördination of the ciliary and external muscles shall likewise be perfect. In hyperopia one of these conditions—and sometimes both—fails in that the antero-posterior diameter of the globe is too short; hence the greater the degree of this defect, the greater the demand upon the ciliary muscle. In astigmatism the effort to adjust the eye so as to secure distinct vision is again a tax upon the accommodative apparatus, as the patient is more or less constantly making an effort to accurately focus unequally refracted rays. In myopia, spasm of the ciliary muscle is liable to result, anyhow accommodative exercise is demanded for all points beyond the reading distance, and the higher the degree of the myopia the greater the strain upon the muscle. Retinal asthenopia may also occur here, due for the most part to the chronic choroidal inflammation accompanying the posterior bulging of the sclerotic. A tendency to or actual divergence, when one or both eye-balls are considerably misshapen, gives rise to muscular asthenopia.

Observe, now, that these errors of refraction giving the symptoms of asthenopia are all due as above described to a defect in the mechanical arrangement of the structures necessary to the formation of a perfect image on the retina. As rest cannot modify mechanical construction, it is clear that rest of itself can do no more in these cases than to mitigate or temporarily fully to remove the symptoms. The cause persisting, the effect will necessarily follow.

There is, however, a peculiar class of cases that are worthy of especial mention: those in which a low degree of refractive defect exists, but which is entirely or in a great measure overcome by the strength of the ciliary muscle until the accommodative power is weakened by some form of disease, as measles, scarlet fever, diphtheria, or malarial fever. These cases will not as a rule promptly recover after the subsidence of the disease, and rest becomes efficient only after a prolonged season, if at all, to accomplish restoration.

In point of fact, I believe it to be almost invariably true that unless the function of the eye, weakened by these diseases, is soon regained, that an error of refraction will be found to figure as the cause why it is not.* Hence, if the general practitioner depends upon rest in the great majority of such cases as the *sine qua non*, he will follow an *ignis fatuus* to the "slough of despond." Rest is an important adjunct; but lenses are the agent that render rest efficient.

In general, then, it may be said that a purely functional or reflex affection of the eyes producing asthenopia rarely occurs unless a previous error of refraction or muscular weakness existed to favor the influence exerted by the disease of remote organs. Waiting for rest to accomplish restoration of accommodative power, the patient meantime overtaxing the weakened ciliary apparatus in testing his ability to read, has been the fruitful cause of additional trouble in common with the symptoms directly due to the refractive defect. Stress enough is not laid upon the fact that more damage may be done to an eye, weakened by disease or malformation, in a few minutes' use after fatigue occurs than can be counterbalanced by a comparatively long period of rest. A valuable consideration, too, is that the patient comprehend the importance of using the eyes judiciously, and not assume that glasses, will immediately neutralize all the trouble. Rest at short intervals will only too frequently be required in order quickly to enjoy a return of the lost muscular tone. It cannot be too strongly impressed upon the mind of the patient, both for his own comfort and the reputation of the oculist, that repeatedly using the eyes with or without glasses after a sense of weariness occurs, is too often the cause of prolonged asthenopia. Under such circumstances the intervals of rest accomplish next to nothing by way of permanently restoring the energy of accommodation.

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* The exception is more frequently observed in diphtheria, as a marked paresis or an actual paralysis of the ciliary muscle is more frequently produced by this disease.

But in none of the anomalies of refraction or of the muscles is the reliance upon rest alone capable of accomplishing better results than in myopia. This is particularly true in the incipient stage, and also in the well established progressive form of whatever stage. The bulging backward of the fundus is accompanied by a chronic inflammatory process affecting principally the choroid and the sclerotic coats. The presence of congestion in the choroidea and retina gives rise to asthenopia, which is often increased by ciliary spasm and by contraction of the recti muscles. In this condition of things rest is of the greatest importance first and last. In the incipient form of myopia, as commonly developed in school children, the same remark holds good, though in young persons a certain amount of work will be tolerated that in the adult would more noticeably increase the symptoms.

In brief: 1. In the asthenopia of hyperopia and astigmatism rest is only palliative—correction with suitable lenses being the only means of permanently neutralizing the cause.

2, In myopia, rest is always worthy of the first consideration. Glasses may or may not aid in relieving the asthenopia. Medication and hygienic rules are of service.

3. In asthenopia resulting from weakness of any of the external muscles of the globe or of the ciliary muscle, prolonged rest alone will sometimes effect a cure; but it should not long be relied upon, to the exclusion of active measures.

4. Asthenopia due to congestion or actual inflammation of any part of the eyeball should be treated with judicious reference to the advantages of rest.

5. Paresis of the ciliary muscle after diphtheria and the like demands a period of almost absolute rest and the avoidance of fatigue for weeks after beginning the use of the eyes.

A CASE OF ORBITAL CARIES.*

BY CHARLES DEADY, M.D.

Bella C.——, æt. nineteen, came to my clinic in the New York Ophthalmic Hospital, September 11, 1888, from a small town in Connecticut.

She stated that for some time previous she had been troubled with overflow of tears from the right eye, and had finally had an attack of inflammation which from her description was undoubtedly a phlegmonous dacryocystitis. This was treated at the time and she recovered, but was still troubled somewhat by overflow of tears.

There was no congestion of the eye, and no evidence that anything was wrong, save a slight tendency to suffusion on looking at anything steadily. Bowman's operation had been made on the lower canaliculus, and I found that I could pass a No. 7 probe with comparative ease.

She was advised to prevent the collection of mucus in the lachrymal sac by keeping it pressed out, and Stannum 3 was prescribed.

On her second visit I was able to localize the cause of a peculiar expression of her face which I had noticed before, but had not understood. I now saw that there was a greater distance between the internal canthus and the nose on the affected side than there was on the opposite side of the face. There was no discoloration, pain, or tenderness to indicate any diseased condition, but desiring to be certain as far as possible, I took up Bowman's knife and slit the upper canaliculus, from which, much to my surprise, there issued a thick stream of yellowish-white discharge of the consistence of molasses, and in such quantity that I was obliged to hold a towel under the eye to protect the patient's

* Read before the American Institute of Homœopathy, June, 1890.

clothing. The flow continued until the towel contained a pasty mass of the size of a small hen's egg.

I then proceeded to wash out the cavity with a syringe, and the injection of the fluid seemed to open other pockets, for two or three times the flow started again.

Finally it was thoroughly cleansed, and the patient said she was relieved of an ill-defined weight and pressure which she had had in the forehead, but which she had not mentioned. On the following four or five days I found the cavity containing a large quantity of muco-purulent discharge, and I began the use of a weak solution of bichromate of potash as an injection. Under this treatment the discharge lessened, and the case was doing very well, when on one day the solution did not return from the cavity, and in a moment I had protrusion of the eyeball and marked puffiness of the lids, showing that the fluid had infiltrated the cellular tissue. I introduced into the canaliculus a syringe having a nozzle large enough to completely fill the opening, and by creating a vacuum I was able to get out most of the solution from the tissue. I then ordered the application of ice to the part, and gave Acon. 1. There was some inflammatory reaction, but it subsided in a few days. I had previously explored the cavity with a probe and had found one or two spots of roughened bone, and as the cessation of the cleansing process had caused a considerable increase in the amount of discharge, I decided to lay the cavity open, and for this purpose the patient came into the hospital about the middle of October.

Under ether I made an incision through the base of the upper lid and parallel with the superior margin of the orbit. The incision extended about a half-inch outward from the nose ; the cavity was opened freely and explored, with the result of finding considerable caries in situations which were before inaccessible to the probe. The cavity was thoroughly cleansed and a tent introduced. It measured from 1¼ to 1½ inches in various directions. From this time until January, 1889, the cavity was cleansed twice daily by filling it repeatedly with a solution of hydrogen peroxide until bubbling ceased, and as the patient was in a much reduced condition of health, she was given concentrated nourishment and received internally at first Arsenicum iodide and later Calcarea hypophos., under which regimen her general condition became much improved.

Early in January, 1889, she was put upon Silicea 3, with the local use of the hydrogen peroxide, which was now alternated with a solution of hydrarg. bichloride 1–10,000.

The improvement continuing, the patient began to be restless and homesick, and as her parents urgently requested it, she was finally allowed to go home under protest, on Feb. 20, taking with her solutions to cleanse the diseased parts and under strict orders to do it thoroughly every day. She returned to the hospital March 15, very much worse in every respect. The discharge was exceedingly profuse, and her general health had declined. She was put upon the same treatment as before, and has since been constantly under notice; remaining in the hospital for several months, and later boarding with a relative in this city and coming to the hospital daily.

At present the cavity is very small. Only slight roughening of the bone is perceptible to the probe, and the discharge is very slight, so that she only comes for treatment every two or three days.

A VOLUNTARY CILIARY MUSCLE.*

BY GEO. S. NORTON, M.D.

We not unfrequently see cases in which certain muscles, which are as a rule involuntary, can be brought into action at will. For instance, we find not uncommonly persons who can move the auricle or the scalp; even the external muscles of the eye may be so under control that a strabismus in one direction or the other, especially convergent, can be produced. But it has never been my fortune, with the exception of the case here detailed, to meet with a ciliary muscle so decidedly under the control of the patient. Others may have noticed similar cases, but I do not remember ever seeing one reported.

Mrs. A——, age thirty-five, while in my office with her boy, whose refraction I was testing, remarked that she was able to make her eyes nearsighted whenever she desired. She said that she had acquired this power when a girl and acting in amateur theatricals. Whenever she went before an audience the sight of people so frightened her that she was liable to break down. Soon, however, she found that she was able to adjust her vision so she could not see her audience, and this she had continued to practice for her own amusement whenever she desired. She stated that she was able to maintain this condition for one half-hour or more without any inconvenience or fatigue, and return at once without difficulty to her normal vision. She had never experienced any asthenopic symptoms, could use the eyes with perfect comfort an indefinite length of time, and considered her eyes unusually strong and vision very acute. This history so inter-

* Read before the American Institute of Homœopathy, June, 1890.

ested me that I took considerable care in testing her, using several test-cards with different letters, bringing them suddenly in view when her eyes were normal and myopic, with and without glasses. Her statements never varied, no matter what test was employed.

My examination gave the following results: The vision was $\frac{15}{15}$ in each eye, but by an effort of the will she could produce a myopia so that No. 200 could not be seen at 15 feet; this was neutralized by a concave 10, which made the vision $\frac{15}{15}$. She could also, at any time, without any attempt to make her eyes myopic, overcome a concave 10, with apparent ease. A very little contraction of the pupil could be detected, and was the only noticeable change in the eyes when she became nearsighted. The ophthalmoscope showed the fundus perfectly normal in each eye. Retinoscopy, however, confirmed most positively the test with glasses. When the eyes were normal the shadow moved against the mirror, and when she was myopic the shadow moved with the mirror. She was directed to change her vision without my knowledge; at once the shadow would reveal whether she was myopic or not.

NOTES ON LA GRIPPE.

In a talk before the Medical Society of the State of Ohio recently, Dr. G. C. McDermott of Cincinnati gave some of his experience in the treatment of such of the sequelæ of La Grippe as would naturally come under the notice of the oculist and aurist.

The doctor called attention to a class of cases in which soreness of the eyeballs to touch, pain on moving eyes, shooting neuralgic pains from the eyes into the temples and the occiput, were associated with many asthenopic symptoms and a complete inability to use the eyes.

These symptoms were present in many cases and yielded readily to the action of Bryonia 3x. Chrysophanic acid in the sixth trituration has in his hands cured a large number of cases where the following conditions were present: Pure retinal asthenopia either with or without refractive error; chronic hyperæmia of the conjunctiva with burning, itching and smarting of the eyes and photophobia whenever attempting to use them. In the large majority of these cases ciliary blepharitis was present. All of these symptoms came on in from one to six weeks after the attack of La Grippe.

In passing we might observe that chrysophanic acid is not appreciated to the extent it deserves in disease of the eye and ear. Used either locally or internally, or both, it is a magnificent remedy for the large majority of cases where a filthy, scabby condition exists with a tendency to the formation of thick crusts. We have had cases in which the whole ear and the tissue surrounding it appeared to be one great scab, from the center of which oozed the pus which

came from a suppurative otitis media, and on using the remedy both locally and internally we have seen the whole condition melt away in two or three weeks. Recently a like condition of the skin of the eyelids and part of the face disappeared in less than one week under this treatment. For external application we use a salve made of vaseline in the proportion of from four to eight grains of the drug to the ounce, carefully rubbed up in a mortar.

Dr. McDermott calls attention to the large increase in the number of cases of ear disease which have been noticed since the epidemic subsided, these not being uniform in character but varying from a subacute catarrh of the middle ear to a severe suppurative inflammation, and warns the general practitioner that the seeds have been sown for extensive and wide-spread deafness, as also many nervous affections of the eye.

For the laryngeal irritations which have been present in many cases he has found Kali phos. 3x trituration a specific.

D.

OPHTHALMOLOGICAL NOTES.

BY H. H. CRIPPEN, M.D., NEW YORK CITY.

Trousseau (*La Médecine moderne*) from an analysis of 150 cases attempts to show, on one hand, that diseases of the general system have no influence over the success of cataract operations, and, on the other, that the operation in itself does not aggravate the general state except in particular cases. Looking back over the literature, we find that Trousseau's conclusions are only those of Calamy ("Traitement de la cataracte diabétique," Thèse Paris, 1890) enlarged upon. These are: That cataract operations do succeed well in the majority of diabetic cases. Among patients affected by Bright's disease, among the tuberculous, and among the emphysematous, the operation is followed by nothing that can be attributed to these diseases. Likewise in tabes or cancerous cachexias, Trousseau has operated for cataract with perfect success.

Lastly, among patients subject to cerebral lesions, the operation may cause a reawakening of the cerebral trouble; for example, a hemiplegic patient may fall into coma. On the same order of ideas, alcoholic subjects may present an attack of delirium tremens after an operation for cataract. This is the only restrictive part of Trousseau and Calamy's conclusions.

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Martin (*Annales d'oculistique*) sets himself to solve that question which confronts us daily: why the same degree of astigmatism, corrected by an appropriate cylinder, is accompanied in some cases by a normal acuity of vision and in

others by amblyopia of various degrees, when no other factor capable of augmenting the visual trouble appears to associate its effects with those of the asymmetry? Statistics are presented of 128 cases of anisometropic astigmatism. From these statistics it is concluded that the amblyopia of one eye depends wholly upon the state of the congenerous eye. If an astigmatic eye is associated with an eye not astigmatic and of normal visual acuity, this astigmatic eye will be affected by an amblyopia much more pronounced than if its fellow eye were also astigmatic. In a word, monolateral astigmatism will be accompanied by a greater degree of amblyopia than bilateral astigmatism of equal degree. It appears, moreover, that when one eye is slightly, or not at all, astigmatic, the fellow eye, markedly astigmatic, makes less and less accommodative effort to correct its optical defect, in proportion to the difference between the static refractive powers of the two eyes. We will also add that it is possible that a long continued asthenia, from its effect upon the ciliary muscle, seems also to be one of the factors in causing a high degree of amblyopia in monolateral astigmatism.

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Tuberculosis of the sclerotic is so rare that the case reported by Muller (*Semaine Méd.* 19 Mars, 1890) appears to be the only one on record. The disease occurred in a boy, as a tumor at the inferior and external part of the sclerotic. Between the tumor and the external angle of the eye the conjunctiva was covered by several nodules. A diagnosis of cysticercus was first made, but in operating, the contents were only a soft mass and the walls of the cyst were formed by granulation tissue. On microscopical examination the walls of the cyst were found composed of miliary tubercles containing the bacilli of tuberculosis. Some weeks after the operation the tumor returned and was again excised, the base of the tumor being cauterized as a radical treatment. The thin layer of sclerotic now became ectasic, however, and the eye was soon lost in consequence. The

author proposes, in the future, injections of iodoform into the tumor instead of excision.

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Dr. Bribosia, in a brochure lately published in Brussels, advocates the use of atropine in the extraction of cataract without iridectomy. He recalls to us first that the iris contracts after the corneal section is made and obstructs the passage of the crystalline, especially if there are soft parts in the lens. This difficulty he removes by instilling atropine (one drop of ½ per cent. solution) the evening before the operation. The following day the pupil is dilated; it does not obstruct the maneuvers of extraction, and the action of the alkaloid being very weak the pupil can be made to contract readily after operation under the action of eserine, 1 per cent. solution, in intra-ocular injection. Dr. Bribosia has made 250 cataract extractions without iridectomy, in the last two years, and, of these, 50 were done in the manner described. By the use of atropine before the operation and eserine after extraction he claims a minimum of prolapses of the iris.

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Eulenberg (*Centralbl. f. klin. Med.*, Jan. 4, 1890) had made careful measurements of the electrical resistance in 28 cases of exophthalmic goitre. The general conclusions reached by him may be summarized as follows: A relatively low resistance, between 1000 and 2000 ohms, obtained by the use of a small voltage (10 Siemen's elements), although not a constant accompaniment of Basedow's disease, is still very frequently found.

It may be taken as a general rule in the diagnosis of exophthalmic goitre that the presence of the characteristically diminished electrical resistance is a valuable symptom. Its absence, however, has no particularly negative significance.

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Logetschnikow (*Annales d'oculistique*) contributes the following to the indications for iridectomy and sclerotomy

in glaucoma: 1. Iridectomy, generally speaking, is more certain than sclerotomy. 2. In particular, iridectomy should be preferred in chronic and subacute inflammatory glaucoma, in which the changes in the uveal tract play a predominant part. 8. In acute glaucoma, and especially in absolute glaucoma with commencing degeneration of the eye, sclerotomy is preferable to iridectomy. 9. Sclerotomy, in the period of acute attack, is, for the majority of cases, best; when the attack runs on to the subacute form iridectomy must be made; thus acute glaucoma often demands two operations. 10. Sclerotomy is indicated in the initial period with conservation of good vision. 11. It is preferable to iridectomy in simple glaucoma. 12. Sclerotomy is indicated also in all cases of glaucoma where prolapse of the vitreous body is feared, for example in congenital hydrophthalmia. 13. Iridectomy is always better in cases of secondary glaucoma with anterior or posterior synechia, or when glaucoma is a consequence of a cystoid cicatrix of the sclerotic. 14. The best procedure of sclerotomy is that of Wecker-Mauthner [as described in their late text-book]. 15. The proposition of Snellen to try iridectomy with conservation of the pupillary border is worthy of attention. 16. The myotics have an important position in the treatment of all forms of glaucoma; eserine is necessary in sclerotomy.

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Probsting (*Klin. monatsbl. f. Augenheilkunde*) reports the observation of a case of retinitis proliferans in a man, of forty-four years, subject to cardiac troubles and Bright's disease. Twenty years before, the patient had received a blow on the eye attacked by the proliferations. The other eye presented the ordinary lesions of an albuminuric retinitis. The pathogeny of this case was very obscure. It is difficult to decide which ought to be considered the prominent factor in the production of the proliferous changes in the retina. Is it the previous blow, the cardiac affections, or the kidney lesion? Neither the opinion of Manz, who attributes retinitis proliferans to retinal changes

pure and simple, or that of Leber, who offers the theory of a growth of tissue over the retina, proceeding from the vitreous body, finds in this case a positive confirmation.

We are able to cite here, in this connection, two other observations on this disease made by Schleich ("Ein Beitrag zu der Entslehung der spontanen Bindegewebsneubildung in der Netzhaut und im Glaskörper"). Both these cases occurred in young subjects (twenty-three years, and twenty years) affected by cardio-vascular troubles. In both cases the disease began by profuse hæmorrhages into the vitreous, and in one subject, a young girl, the vitreous hæmorrhages were a complement of the menstrual flow. In adding to this the fact that in neither case was there found at any time the diffuse retinitis described by Manz as the first stage of retinitis proliferans, Schleich adheres to the theory of Leber. In consequence the author believes that the so-called retinitis proliferans would be better named, "a conjunctive neoformation situated on the retina and in front of this membrane."

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Straub (Albrecht von Graefe's *Arch. f. Ophth.*, T. 34, Fasc. 4, pp. 52–87) has pursued some remarkable researches on the equilibrium of the tension of the eye. He establishes first that the elastic force of the choroid is sufficient to support all the intra-ocular pressure. Besides this Schulten has demonstrated that the sclerotic is not so resistant a tissue as is ordinarily believed. It distends sensibly under the force of a pressure a little surpassing the normal. Augmenting again this pressure, the dilatation does not increase in the same proportion, if the action is of short duration; but the sclerotic continues to distend if the pressure is of long duration. If then the sclerotic is apt to support strong, but temporary, increase in the intra-ocular pressure, such as results from the contractions of the extrinsic muscles [and this, according to the author, is its true *rôle*] it does not oppose itself to a lasting augmentation of this pressure. In normal states the major portion of the ocular pressure is

supported by the choroid, which maintains its strong tension by means of its *tonus* and the contractions of the ciliary muscle.

From his point of view, Straub considers Descemet's membrane as completing the uveal tunic in the anterior segment of the eye. In fact it should be considered as a tendon of the ciliary muscle. The membrane of Descemet ought, then, to support a large part of the intra-ocular pressure. In the same manner as the choroid—according to Straub—preserves the supra-choroidien space from the intra-ocular pressure, so the membrane of Descemet preserves the corneal lamella. [According to this theory we note the utility of myotics in certain corneal affections.]

The contractions of the ciliary muscle should enlarge the spaces of the pectinated ligament and thus afford better access to the canal of Schlemm. The veins of this last are subject in a great part to intra-ocular tension on account of the tendon of the ciliary muscle which forms the internal wall of the canal.

The venæ vorticosæ are subject to the same mechanical conditions as the veins in Schlemm's canal. The tonic and other contractions of the ciliary muscle cause these veins, in the supra-choroidien space, to undergo a compression less than in the choroid itself; from this proceeds a species of aspiration exercised by these veins, as much on the venous blood as on the intra-ocular liquids, notably the aqueous humor, which from the corneo-iridien angle passes backward between the sclerotic and choroid.

Following out the author's ideas on intra-ocular tension we find him showing that the point of departure of glaucoma will be a diminution of the elastic force of the choroid, having as a consequent a venous stasis and a retention of the intra-ocular fluids. It is easily comprehended how glaucoma becomes a disease of an advanced age, and the theory points out the reasons for the utility of myotics and for the harmful effects of atropine in glaucomatous eyes.

V. Basevi (*Annali di Ottalmologia*) has conducted some experiments on the sensibility of the periphery of the retina to light and colors in normal eyes and in some pathological cases. He obtains the following:

The extent of the field of perception is greater for blue than for any other color; after this comes yellow, red, and lastly, green. If the normal field of green is taken as a *unit*, the red has a visual field of 1.14; the yellow 1.19; the blue 1.32. In the nasal half of the retina, the colors are perceived better than in the temporal half. The visual field is more extended above than below, as 1.5 : 1.4. The retina is, on all of its extent, more sensitive to white light except at its center where this sensitiveness is less. The sensitiveness to colors decreases, on the contrary from the center to the periphery. The *fovea centralis* is the point where the visual intensity for colors is the greatest. The color to which the sensitiveness diminishes most rapidly is blue, then green, and then red.

With regard to the intensity of sensation produced by the different colors, the experience of the author coincides with the results obtained by Aubert, Landolt, and Chodin.

Among hypermetropes, the author has found, like Uschaloff and Reich, a visual field a little more extended than among emmetropes and myopes. The visual field of colors is a little more extended for yellow and green and more contracted for red and blue than among emmetropes. Among myopes the sensitiveness for white light has a more contracted field than that of emmetropes.

In optic neuritis the reduction of the central visual acuity is manifested some days before the narrowing of the visual field; this has a certain relation with the diminution of the luminous and peripheral chromatic sensitiveness. In forms of advanced optic neuritis, the excentric vision is almost abolished, the chromatic much diminished. In commencing glaucoma, the peripheral chromatic sensitiveness is only a little diminished and remains almost without variation about the center. The narrowing of the visual field advances from the nasal side up to the point of fixation,

while in neuritis the central visual acuity is first attacked. In advanced glaucoma, paracentral scotomata for light and colors are found. In commencing atrophy from chronic alcoholism, the peripheral luminous sensibility diminishes slowly and there are formed paracentral scotomata in the shape of ellipsoids of three axes. In many cases the author notes abolition of the sensitiveness at the periphery of the retina for green, and progressive diminution of the perception of colors toward the center.

In all the diseases mentioned, the minimum extent of the colored surface necessary for the production of sensation is always greater than that necessary for normal eyes.

REVIEWS.

THE CONCORDANCE REPERTORY OF THE MORE CHARACTERISTIC SYMPTOMS OF THE MATERIA MEDICA. By WILLIAM D. GENTRY, M.D. Vol. I. New York: A. L. Chatterton & Co. 1890.

The first of the six volumes of this immense Repertory of the Materia Medica has now made its appearance. Of so-called Repertories there are many in the homœopathic school, but to the large majority of physicians they have proved most unsatisfactory. One must diligently study the introductory chapter of nearly all Repertories to be able to use them, and unless they are in daily use this study will often be repeated before the plan has been mastered. Again, in the effort to condense, the characteristic indications for the drug have often been lost. These objections to the Repertories now in common use have been obviated in this work of Dr. Gentry's. We have here a Repertory arranged upon the plan of Cruden's Concordance of the Bible; an arrangement so simple and uncomplicated that any novice can, without study, turn quickly to any desired symptom. By turning to the noun, verb, or essential adjective in any sentence, which will be found in alphabetical order in each section, the whole symptom is at once found. This arrangement necessarily requires much space, to cover the immense number of symptoms in the Materia Medica. One is therefore not surprised at the six volumes of nearly nine hundred pages each.

Vol. I. is divided into six sections as follows: Mind and Disposition; Head and Scalp; Eyes; Ears; Nose; Face. It thus covers especially that field of interest to oculists and aurists. The laryngologist will find more of value in the second volume.

In this mass of symptomatology, as in all Materia Medicas, many absurd and ridiculous symptoms will be found—mere trash—but

notwithstanding there are also to be found symptoms of great value in leading to the selection of the indicated drug.

There is no Repertory or Materia Medica yet published which equals this Concordance in the ease and rapidity with which special symptoms may be found. We take pleasure in recommending this first volume to all specialists who believe in the curative action of internal medication in the treatment of eye and ear diseases, as it will well repay its cost.

The publishers have issued the work in their usual good style.

N.

THE MEDICAL ANNUAL AND PRACTITIONERS' INDEX, 1890. New York: E. B. Treat & Co.

This is the eighth year of the English edition of their Medical Annual, and the second year of the American edition. As a result we have a book of six hundred pages, quite well illustrated, which contains most of the medical discoveries in the Old School during the past year. There is little of value in the departments considered in this journal. N.

PRACTICAL ELECTRICITY IN MEDICINE AND SURGERY. By G. A. LIEBIG, JR., PH.D., and GEORGE H. ROHÉ, M.D. Philadelphia: F. A. Davis. 1890.

This work of nearly four hundred pages is a credit to the publisher, as it is well printed on excellent paper, well bound, and profusely illustrated.

The book claims to be a practical treatise upon the application of electricity to medicine and surgery; as such it will, no doubt, be of considerable interest to the general practitioner. The book is divided into three parts: Electricity and Magnetism; Electro-Physiology, Electro-Diagnosis, and Electro-Medical Apparatus; The Applications of Electricity in the Treatment of Diseases. The twelve pages devoted to the eye, ear, and throat contain nothing particularly new. N.

MISCELLANEOUS NOTES.

OBITUARY NOTICE.—It is with sorrow that we record the death of another prominent ophthalmologist. M. le Docteur Cuignet, of Paris, one of the editors of the *Recueil d'Ophthalmologie*, died in Algiers last March.

COLLEGE OF THE NEW YORK OPHTHALMIC HOSPITAL.—The officers for the ensuing year are as follows: Dr. Wm. E. Rounds, President; Dr. F. H. Boynton, Dean; Dr. A. B. Norton, Secretary. The announcements are now out and can be had upon application to the Secretary, 152 West Thirty-fourth Street, New York City.

PERSONAL.

—The Académie des Sciences, Lettres et Arts de Bordeaux have granted to Dr. H. Armaignac a silver medal, in recognition of the value of his late work entitled "Mémoires et Observations d'Ophthalmologie Pratique."

—The death of Professor U. Trélat, of Paris, is chronicled by the *Revue Sanitaire*. M. Trélat was a surgeon of exceptional clinical experience, and a model operator. During the later years of his life, he devoted much time to ophthalmological surgery, and found his greatest triumphs in autoplastic operations on the face and eyelids.

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HYDROBROMIDE OF HYOSCYAMINE ($HBrC_{17}H_{23}NO_3$).—ITS POWER IN RAPIDLY OVERCOMING SPASM OF ACCOMMODATION.*

BY N. L. MACBRIDE, M.D., O. ET A. CHIR., NEW YORK CITY.

In treating neglected cases of iritis, in which broad and strong adhesions had formed between the iris and the capsule of the lens which had resisted the repeated instillations of strong solutions of the sulphate of atropia, duboisia, and homatropine hydrobromate, and even the use of crude sulphate of atropia, and having noticed how readily and completely they were torn apart after instilling a solution of the hydrobromide of hyoscyamine, I was led to try it in cases of spasm of the accommodation, when the patient could not spare the time it took to completely paralyze the accommodation by atropia sulphate. The results were so satisfactory to me that I have used it in some fifty cases since then. While my time has been limited, and the cases too few in number to make anything like a complete study of the drug possible, enough facts seem to have been obtained to warrant others in making a more extended investigation of the drug. This is my excuse for presenting to you this incomplete paper.

Many of the patients on whom the drug was used were treated at the clinic of the New York Ophthalmic Hospital; others were my private patients. The results were so

* Read before the Hom. Med. Soc. of the State of N. Y., Oct. 1, 1890.

similar in all the cases that the detail of a few will be sufficient to illustrate the action of the drug. I may say here that an aqueous solution of the hydrobromide of hyoscyamine, one part to the hundred of distilled water, was used in all the cases, and only one drop was put into each eye. In old persons it was found well to use a very small drop, on account of the unpleasant symptoms produced, which were dizziness, nausea, and a tendency to fall forward. Two old men became completely unconscious and remained so for ten or fifteen minutes, but all recovered without any disagreeable after effects.

In young adults and children no symptoms of the drug were produced, except a diffuse haziness of the fundus of the eye, which was to be seen quite plainly with the ophthalmoscope, from half an hour to two hours after the drug had been used. In spite of this condition of the fundus, the acuity of vision was not impaired, but on the contrary the sight was improved in several cases. Whether this was due to stimulation of the nerve fibers, or to the correction of irregular astigmatism, we did not determine. It certainly was not wholly due to the correction of the regular error of refraction, for it was found in cases in which the error of refraction was the same after the accommodation was paralyzed as it was before. I hope, by further experiments, to find out more about this action of the drug.

The first case on our list is that of a man twenty-seven years old, who appeared for treatment complaining of dimness of vision and pain when using the eyes, and general asthenopic symptoms, having suffered about two years. On examining his eyes the vision of the right was found to equal $\frac{20}{70}$, the left $\frac{20}{50}$. The refraction appeared to be myopic. The right eye required -1. D. spherical lens to correct the apparent error of refraction. It made the acuteness of vision equal $\frac{20}{20}$ with slight difficulty, and a $-.75$ D. spherical lens made the vision of the left eye equal $\frac{20}{20}$ with difficulty. The ophthalmoscopic examination showed the refraction of both eyes to be astigmatic. On account of the irregular action of the ciliary muscle, the degree was not made out. The near point for Snellen's test type, No. 1, was found to be four

inches for each eye. A drop of the solution of hydrobromide of hyoscyamine was instilled in each eye and in five minutes he could not read the same type nearer than eight inches. In ten minutes the near point had receded to twenty inches, and in twenty minutes the near point coincided with the far point, and the accommodation appeared to be perfectly paralyzed ; the pupils were widely dilated. At this time the vision was again tested and was found to be $\frac{20}{40}$ in the right eye, and $\frac{20}{30}$ in the left ; and a + .75 D. cylindrical lens, axis 180°, corrected the error of refraction of both eyes and made the vision $\frac{20}{20}$. The effects of the drops were allowed to pass off and four days after the patient was again examined, when the pupils were restored to what appeared to be their normal diameter and accommodation was again active. He could again read Snellen's test type, No. 1, at four inches. Vision was $\frac{20}{70}$ in the right eye, and $\frac{20}{50}$ in the left. A minus lens of .50 of a dioptric was required to make the vision of the right eye $\frac{20}{20}$. Plus lenses, either spherical or cylindrical, made the vision worse. But the left eye was corrected by a + .50 D. cylindrical lens, which made the vision $\frac{20}{20}$ with slight difficulty.

The accommodation was again paralyzed with hyoscyamine, and in twenty minutes the eyes were again examined with the following results : Vision of each eye equaled $\frac{20}{30}$. A cylindrical + .75 D. made the vision equal $\frac{20}{20}$ and corrected the error of refraction. No more drops were used at this time and seven days afterwards the case again appeared for examination, when the power of accommodation and the size of the pupil were found to be restored to the normal. On examination the vision of the right eye was found to be $\frac{20}{50}$, which was made $\frac{20}{20}$ with slight difficulty by a — .50 D. spherical lens. The same lens corrected the left eye, the vision of which was $\frac{20}{40}$ without correction, and $\frac{20}{20}$ with it. The patient was now given a solution of the sulphate of atropia, four grains to the ounce, and instructed to put a drop in each eye three times a day for three weeks, and to wear smoked glasses to protect his eyes from the glare of the light. He followed these instructions and returned at the end of the time for examination, when vision was found to be $\frac{20}{40}$ in each eye. The refraction of the eye was tested and was found to be the same as at the first examination under the hydrobromide of hyoscyamine.

I relate this case in full, because it seems to show, in a

marked manner, the superiority of hyoscyamine over atropia in rapidly paralyzing the acommodation.

CASE II.—Girl, aged nineteen years. Vision of right eye $\frac{20}{40}$. Vision of left eye $\frac{20}{40}$; + lenses both spherical and cylindrical made vision worse; while a $-\frac{1}{40}$ spherical lens made vision $\frac{20}{20}$. Ophthalmoscopic examination showed the case to be one of hyperopia. The accommodation was paralyzed by hyoscyamine, and eighteen minutes after its use the refraction of the eyes was found to be hypermetropic and a $+\frac{1}{40}$ spherical lens made the vision $\frac{20}{20}$. This case was also examined after a prolonged use of sulph. of atropia and the results did not differ from the first examination under hyoscyamine.

CASE III.—Man, twenty-one years old. Myopia. Vision of right eye $\frac{20}{70}$, of left eye $\frac{20}{100}$. A — lens of 1. D. was the weakest that would make the vision equal $\frac{20}{20}$. Twenty-five minutes after using hyoscyamine the accommodation appeared to be paralyzed, and the refraction was still found to be myopic, but in a less degree. A — .50 D. made vision equal $\frac{20}{20}$. Repeated instillation of both hyoscyamine and atropia did not change this.

CASE IV.—Girl, twelve years old. Presented herself with a history of having grown suddenly near-sighted. Examination showed the vision of the right eye to equal $\frac{3}{200}$, and that of the left eye to equal $\frac{7}{200}$. Her far point for clear vision was about five inches, and her near point about two inches in front of her eyes. A — $\frac{1}{5}$ spherical lens made the vision of both eyes equal $\frac{20}{20}$. Examination by the ophthalmoscope showed the refraction to be myopic, but the degree was not made out on account of the constant change of accommodation taking place during the examination. Hydrobromide of hyoscyamine was dropped in the eyes and in five minutes the near point began to recede, and in a few minutes more the near and far points were identical. In about twenty minutes the far and near points had receded to twelve inches; then, for the following ten minutes, no change took place in the far point, and as she had no range of accommodation it was assumed to be paralyzed. Test lenses were again placed before the eyes and it was found that a — spherical lens of $\frac{1}{12}$ would correct the error of refraction and make the vision equal $\frac{20}{20}$. Measurements made by the ophthalmoscope gave the same results and showed that the case was myopic, but that a larger part of

the myopia was due to spasm of the accommodation. The effect of the hydrobromide of hyoscyamine passed off in three days, when the spasm returned. Several examinations were made at intervals of a week, but they did not differ materially from the first except the spasms were less. An examination was afterwards made with a strong solution of atropia sulphate, but the myopia still equaled $\frac{1}{12}$.

I might go on relating cases indefinitely, but they would only be a repetition with a few slight changes in the time the symptoms appeared and passed off. From a study of all the cases, the following facts have been deduced: A solution of hydrobromide of hyoscyamine of the strength of 1 per cent. acts as a powerful agent in paralyzing the ciliary muscle, even when in a state of spasm; a single instillation is enough; paralysis is complete in from eighteen to thirty minutes; the effects pass off in from three to five days; it gives rise to no disagreeable symptoms in children and young adults, and with careful use is safe even in the old, where, of course, it would seldom, if ever, be required to be used for spasm of the accommodation. It appears to be the most powerful of all the mydriatics, one instillation doing as well as repeated instillations of atropia sulphate, and instead of requiring from ten days to three weeks to pass off, the effects pass off in five days at the longest.

My object in making these experiments and reporting these cases is not that I believe that the best manner of treating spasm of accommodation is by paralyzing the ciliary muscle, for I do not,—experience has taught me that we have far better remedies in our materia medica for the treatment of such troubles,—but to find a better drug than atropia sulphate, to be used in cases in which the refraction cannot be accurately determined until the accommodation is put at rest.

CAN HEADACHES AND ASTHENOPIA, RESULTING FROM HYPEROPIA, BE RELIEVED WITHOUT GLASSES?

BY A. B. NORTON, M.D., NEW YORK CITY.

The query propounded in the title of this paper would probably be answered in the negative by a very large majority of all oculists of to-day, and even but a short while ago the writer would also have responded "no"; but in the light of present knowledge and experience we believe that in a great many instances it can be done. I am also prepared to go still further, and make the assertion that, in my opinion, even the correction with glasses of what is understood as manifest hyperopia, in cases associated with exophoria, will, in many instances result in no permanent relief, but rather, ultimately, in positive harm. Furthermore, in cases of hyperopia in which convex glasses are necessary, we believe that, as a rule, proper discrimination as to the strength of the glasses required is *not* made, and as a result some cases are given too strong a glass and others too weak.

I do not wish to be understood as making the claim that *no* case of hyperopia needs glasses, or that *all* cases of headaches in hyperopic patients can be cured without glasses, but simply desire to point out a new factor, which, in my opinion, renders the need of glasses unnecessary in many cases that have heretofore been considered as demanding their use; and further, that those cases in which the necessity of glasses still seems to be imperative, that improper glasses may be prescribed from a lack of careful examinations as to the condition of the recti muscles.

The foregoing opinion is based upon the careful study of over 200 cases of errors of refraction, occurring in my private practice during the past year, together with the associated conditions of the extrinsic muscles of the eye, as shown by the phorometer.

The loss of the normal equilibrium of the ocular muscles, heterophoria, is now admitted by nearly all oculists to be a potent factor in the causation of headaches and asthenopia.

Of the several forms of heterophoria, but one variety will be especially considered as bearing principally upon the subject of this paper, viz., exophoria, or a deviation of the visual lines outward. This condition must necessarily be due to either a weakness of the internal recti muscles, to a preponderance of strength of the external recti, or to both combined. As esophoria will also be referred to in this article, we would say that it is a condition directly opposite to exophoria, or a deviation of the visual lines inward, due either to a weakness of the external recti, to increased strength of the internal, or to both combined. It is the accepted theory that, as a rule, either of the above conditions is usually due to a weakness of one muscle, rather than to increased strength of its opposing muscle.

My attention was first directly attracted to the relation existing between the external and internal recti muscles and hyperopia by the following case:

Case I.—Dr. H., æt. forty-four, came to me in July, 1888, with the following history: Has been wearing glasses for the past six years, having first noticed his eyes causing him trouble while engaged at the close work of his profession, dentistry. He then consulted a prominent oculist of this city, who prescribed a weak convex glass for near work. This glass seemed to give him relief for a time, but after a while the old symptoms returned, and by advice of his physician he began using a stronger glass, with the same result—temporary relief, with, later, a return of his symptoms.

After some while his eyes began to trouble him for distant vision, and he was ordered weak convex glasses for distant vision.

with a similiar relief of the discomfort of the eyes, followed later by a return of the distress and an accompanying increase in the strength of his glasses.

Thus a change in his glasses had been made a number of times during the preceding six years until, when he came to me, he was wearing convex 30 for distant vision and convex 18 for near vision. At this time he was nearly incapacitated for work, from a tired, strained feeling of the eyes on continued application, with an almost constant, heavy, confused feeling of head, smarting and itching of the eyes and eyelids, photophobia, and a generally run down feeling.

Examination revealed vision $\frac{15}{10}$ o.u. Hm. $\frac{1}{60}$ V. $\frac{15}{10}$ o.u. He could read $\frac{15}{10}$ with a convex 30 glass, but it was clearer with the 60. The doctor was told that his glasses were too strong, and upon my advice they were reduced to a 60 for distance and 20 for near vision.

In April, 1889, Dr. H. returned, reporting that his eyes had been much better for several months but of late were beginning to trouble him again. At this visit an examination of the muscles revealed an exophoria of 1° and exophoria in accommodation of 3°, with an adduction of 22° in each eye. Systematic exercise with prisms to strengthen the internal recti was advised, and followed out faithfully, until an adduction of 48° in each eye was obtained, with a considerable improvement in the comfort of his eyes. At this point the phorometer showed orthophoria at distance, but an esophoria in accommodation of 8°, with an abduction of 8°. Thinking then that we were overdoing the exercise of the inner muscles, because the phorometer showed a deviation of the visual lines inward, I thought it advisable to try and strengthen the outer muscles by exercise with prisms in order to correct the esophoria. This was followed out for over two months, until an abduction of 12° was reached and the esophoria reduced to 4°, but, all the time we were exercising the outer muscles, the eyes and head felt very much worse, and we were evidently making no progress toward the cure of his eye strain. Then, upon one examination, a test of his muscles was made with his glasses on, and the mystery was at once solved ; for it was found that, while he had orthophoria at a distance without his glasses, with the convex 60, which he was wearing, there was an exophoria of 1°; and in accommodation, while there was an esophoria of 4°

without his glasses, with the convex 20, he was using, there was an exophoria of 6°.

The use of all glasses at a distance was now stopped, and for near work they were reduced to a 24 ; systematic exercise, with prisms of the internal recti was again commenced and followed out until, in December, 1889, he had reached an adduction of 72° in each eye, which he still maintains.

The phorometer at this time shows orthophoria at a distance and esophoria of 3° in accommodation, but with the convex 60 glass he is now wearing for near vision, there is orthophoria in accommodation.

Outside of the use of glasses and prisms he has had, from time to time, various remedies and electricity used, but none of these have been employed at all regularly.

The strength of his glasses for all near work has been successively reduced, so that he is now wearing a convex 60 glass for near vision and none for distance. His eye and head symptoms have disappeared gradually under the treatment, and his general health has very much improved over what it was at the time he was first seen in 1888.

This case has been detailed at length on account of its peculiar course, and as an illustration of the pernicious results from the use of too strong glasses.

First. We find a case which would be generally considered by all oculists, at the time his eyes were first troubling him, as requiring glasses, and the gradual increase in their strength as was followed would have probably been the treatment of nearly all ; and yet we find the eyes steadily growing worse from their use.

Second. It demonstrates the necessity of examining the muscular condition, both with and without the glasses, which correct the refractive error, and that the treatment should depend upon the condition existing when the eyes are prepared for work, that is, with the glasses they are to use.

Third. The permanent relief found after a course of training of the ocular muscles together with the steady reduction in the strength of the glasses used.

Fourth. The fact that after the strength of the internal recti muscles has been increased from 22° to 72°, we find a gentleman, now forty-six years of age, whose manifest hyperopia is 60, and who was over two years ago wearing a +18 for near vision, now wearing with perfect comfort a convex 60 glass for near work; in other words, making no correction of the presbyopia.

One fact demonstrated in this case, viz., that in this patient a convex 20 glass would convert an esophoria of 4° in accommodation into an exophoria of 6°, or an equivalent to changing an orthophoria in accommodation to an exophoria of 10°, led me to note the result of glasses in other cases, and I found that in many cases of hyperopia with esophoria, we could correct the esophoria by the use of convex glasses, as for example:

Case II.—Miss G., æt. thirty-six years, came to me June 14, 1890, complaining of almost continuous headaches for the preceding two months, usually on top of head or at the occiput. She thought the headaches were somewhat worse upon use of the eyes at near work. Examination showed vision $\frac{15}{12}$ o.u. No Hm. Orthophoria at distance, esophoria in accommodation 4°, abduction 8°, Convex 72 glass gave orthophoria in accommodation. This glass was then prescribed for near vision and at once gave relief of her headaches, which have not returned up to the present time.

The prescription of a convex glass in this case was made simply because there existed esophoria in accommodation, and was given to relieve the undue convergence of the internal rectus muscle. The benefit to be gained from the use of glasses in hyperopia with esophoria was first shown by Dr. George S. Norton, in The Journal of Ophthalmology, Otology, and Laryngology, vol. II., No. I, in which he formulates the most excellent rule: "*In manifest hyperopia with esophoria give stronger glasses than in the same degree of manifest hyperopia with exophoria*, for one can depend upon there being a higher degree of latent hyperopia in the former than in the latter."

One more case in illustration will be all that I shall detail, although many others could be taken from my case records in demonstration of the points it is desired to make, but, as they would prove merely a repetition of the features detailed in these, it is not considered necessary.

CASE III.—Miss H., æt. twenty years, was recommended to me on February 27, of this year, for an obstinate blepharitis, which had existed for a year or more; edges of the lids were covered with dry scales and crusts, with, at some points, small pustules, from which exuded sufficient discharge to cause an agglutination of the lids each morning. On reading, eyes ached and felt tired and the lids became inflamed.

Had been subject to occasional headaches for years. Examination gave V. $\frac{15}{15}$ o.u. Hm. $\frac{1}{72}$ V. $\frac{15}{12}$ o.u., exophoria 2°, exophoria in accommodation 10°; with convex 72 there was exophoria in accommodation of 14°, adduction 16° each eye.

She was told that she did not require glasses, and that exercise with prisms would relieve her.

This was followed out for about two months on an average of twice each week, when she was discharged with the inflammation of the lids entirely healed; no headaches, vision $\frac{15}{12}$ o.u. and not benefited with glasses; orthophoria both for distance and in accommodation.

In this case I believe that the majority of oculists, finding a case of obstinate blepharitis, with a manifest hyperopia of 72, would have at once ordered glasses for near vision at least. At all events, I should have done so previous to my discovery that convex glasses would increase exophoria, as it would have done in this case, with, I believe, an ultimately increased and permanent weakness of the already weakened internal recti.

Now, as to the rationale of this treatment, Donders has pointed out that the function of accommodation and convergence is associated in such a way that, for a given degree of convergence, there is always a nearly equal degree of accommodation, and *vice versa*. This relation is perhaps due to the fact that the muscles of accommodation and convergence both receive the same nerve impulse, as the

action of each muscle is governed by a branch of the same nerve, viz., the third pair, or oculomotorius. The most anterior filaments of this nerve arising from the floor of the third ventricle, supply the ciliary muscle, while the filaments of the nerve arising from the *iter e tertio ad quartum ventriculum* go to supply the internal rectus muscle. Landolt, in his "Refraction and Accommodation of the Eye," says, "that a continued effort of the ciliary muscle is practicable only when it calls for but two-thirds, or at the utmost, three-fourths of the total power of accommodation," and, on the other hand, "that the quota of convergence, which can be utilized for continuous work, ought not to amount to more than one-third or even one-fourth of the positive convergence power; hence, that two-thirds or three-fourths of the latter should be kept in reserve."

The ciliary muscle is composed of three sets of fibers; the meridional, running parallel to the sclerotic; the circular, forming a ring parallel to the cornea; and the radiating fibers. Iwanoff has shown that, in certain myopic eyes, the circular fibers may be entirely lacking, and, on the contrary, in hyperopic eyes are so highly developed, that they form one-third of the ciliary muscle.

As to the action of this muscle Heinrich Müller ascribes a different action to each set of fibers:

1. "The circular fibers of the ciliary muscle exert a pressure upon the edge of the lens, by means of which the latter becomes thicker."

2. "The longitudinal fibers of the muscle cause an increase of tension in the vitreous humor, on account of which the posterior surface of the lens is prevented from shifting, and the action of the peripheral pressure is chiefly confined to the anterior surface"; and also, that, "The arching forward of the center of the anterior surface of the lens is rendered possible and favored by the recession of the peripheral portion of the iris, which is accompanied by a contraction of the deeper (circular) layer of the ciliary muscle and the iris." Thus we see that the circular fibers of the

ciliary muscle are the ones by which the act of accommodation is chiefly caused, and, further, that these circular fibers are especially developed in hyperopic eyes.

These facts should be considered in connection with the fact that hyperopes require a much greater accommodation than myopes who have little or no need of it.

To summarize a little we have first found that there is a positive relation between accommodation and convergence; second, that at the utmost there is but one-third of the power of accommodation held in reserve, while, on the contrary, there is at least two-thirds of the power of convergence remaining unused; and third, that the act of accommodation is especially required in hyperopic eyes.

Now, the query arises, Why is it not right to assume that, by increasing the power of convergence, we can relieve the strain upon the accommodation, with its resulting asthenopic symptoms and headaches? This theory, to my mind, is supported by the fact that when we put on a convex glass in hyperopia, with exophoria, or a weakened power of convergence, we cause a greater exophoria with a diminished incentive to convergence, and thereby diminish the power to converge, with the result that the more delicate ciliary muscle, with but a small fraction of its full power still left unused, is called upon to perform a certain portion of the work of its much stronger associate muscle, the internal rectus, and thus, by increasing the demand upon an already weakened muscle, I believe serious harm may be done.

Experience has demonstrated that, by systematic exercise, we can increase the strength of any of the voluntary muscles of the body. The internal rectus muscle is a voluntary muscle, and its power can certainly be increased by exercise, but the ciliary muscle is an involuntary muscle, and it is, so far as I know, beyond our power to increase its strength; but as the action of these two muscles bear a fixed and definite relation to each other, is it not sound reasoning to believe that, by increasing the power of the one we can reach, we are benefiting both?

Hyperopia is a congenital defect of the eye, and generally attributed to an imperfect development. Landolt states that in children, under eight years of age, hyperopia is the rule. The preponderance of hyperopia in the eyes of the newly born has been shown by the examinations of Ely (*Archives of Ophthalmology*, vol. ix., p. 29), who found, from the examination of 100 eyes of children under eight weeks of age, that emmetropia was present in 17, myopia in 11, and hyperopia in 72.

Now, as hyperopia is seen to exist from birth, and as we all know that the headaches and asthenopic symptoms do not come on as a rule, in these cases, until from the eighth to the twentieth year, or until the child has reached the period of life when from his studies there is an unusual requirement made upon the accommodation, we may safely attribute the cause to either accommodative or muscular asthenopia, i.e., a weakness of either the ciliary or the internal rectus muscle, or both combined.

We have seen that these two muscles may be considered as working together, and we may, therefore, draw the conclusion that by increasing the power of either the ciliary or the internal rectus, or both, we are going to relieve the symptoms resulting from the strain upon either, and, in this way, by removing the symptoms for which the use of glasses is generally advised, we will avoid the necessity of glasses in these cases of a low degree of hyperopia. I say the low degrees of hyperopia because there is, of course, a limit to the possibilities of increasing the power of any muscle, and and my limited experience in this direction will not warrant even a suggestion as to the limit of the degree of hyperopia in which we can forego the use of glasses.

We will now turn to a brief consideration of another condition, viz., presbyopia, which is simply a recession of the near point, due, according to some authorities, to a decrease of the accommodation, and by others to a change in the lens by which it becomes more firm, and in consequence of this increased consolidation, the same amount of muscular action cannot produce the same change on the form of the

lens as formerly. The writer is inclined to believe it to be due, at least partially, or in some cases, to a decrease in the power of accommodation, because we will often find the degree of presbyopia varying very materially in persons of the same age and of the same refraction; this, we believe depending upon the use made of the accommodation by various individuals; as, for example, the farmer, in his occupation, does not make the same use of his accommodation as the book-keeper.

Therefore, if presbyopia is the result of decreased power of the accommodation, why will not the treatment to increase the strength of the internal recti, or the power of convergence, so as to perform in part the work of the ciliary muscle, thereby reserve a greater power of the accommodation to a later period, and in this way postpone the age at which presbyopia would set in?

I make no claims as to having discovered an elixir of life, but merely offer a suggestion as to a possible method of postponing, to a moderate degree of course, the onset of old age in so far as it applies to the presbyopic changes of the eye.

All of the preceding portions of this article refers to cases of hyperopia in which there exists exophoria. If, however, we have hyperopia with esophoria, as in the second case reported, my experience leads me to believe that the use of glasses is imperative, and I have found that in the majority of cases we can correct the esophoria by use of the convex glass, and it has been my custom to prescribe the glass which corrects, or nearly so, the esophoria; and this will usually be the glass that represents the manifest hyperopia, or a little stronger one, and should be used continuously. In some cases, in which the esophoria is of a high degree, the convex glass necessary to correct the esophoria will be too strong to be worn with comfort, when we should only approach as near as possible to a correction and yet give comfort and clear vision to the patient. If presbyopia exists with hyperopia, and we have an esophoria in accommodation greater than that at a

distance, a much stronger glass (sufficient to correct the esophoria in accommodation) is given for near vision.

To conclude, the following deductions may be drawn:

1. Always examine the muscular deviation with and without the correcting lenses, as convex glasses will increase exophoria and decrease esophoria.

2. If exophoria exists with hyperopia, always prescribe the weakest glass possible or none at all.

3. If esophoria is found with hyperopia, prescribe the glass that corrects the esophoria, or as nearly so as possible.

TUBERCULAR LARYNGITIS.

BY D. G. WOODVINE, M.D., BOSTON, MASS.

Mr. Blank presented himself at the dispensary clinic of Boston University School of Medicine, Nov. 15, 1889, for treatment of disease of the throat.

History of the case from the patient: "Have been sick for two years and a half with sore throat and persistent cough. During this time have been under the best professional care, of the old school, that money could obtain. Now my money is gone and I am obliged to apply to this charitable institution for medical aid. Have lost between twenty-five and thirty pounds of flesh; have night sweats, inclined to diarrhœa, have fever turns, and feeling of excessive weakness. My voice is becoming more indistinct as the months pass, and I raise, after coughing a long time, a greenish, round-shaped sputum. Am greatly troubled about eating and drinking, cannot take any kind of food, either liquid or solid, without coughing and almost strangling. This has been so for three months and has gradually grown worse until now I am really afraid to eat or drink for fear of strangling; in fact, I eat as little as possible and drink as little as I can, on this account. I feel that my strength is going, and unless something is done soon to overcome this tendency to strangle, I can live but a little time. I told my wife the other day, that if I ever was able to swallow naturally again, I would drink myself to death. This only shows how intense my suffering has been for the want of something to drink. Have had two or three hæmorrhages in the last two years."

Examination of the mouth, pharynx, posterior nares, larynx, and lungs: The tongue was coated with a whitish fur, the breath offensive. The mucous membranes of the pharynx and posterior nares were affected with chronic inflammation, and the mucous

membrane of the septum ulcerated. The epiglottis and the rima glottidis were œdematous, and in the median line and half-way down the length of the epiglottis was a perforation of about the size of a buckshot, from ulceration. This accounted for the difficulty of swallowing food and liquids. The ventricular bands and vocal cords could not be seen by the ordinary methods of examination, because the epiglottis was in such a pendant position. The lungs were in a tuberculous condition; there was dullness in the intra-clavicular region with bubbling râles; but the physical suffering in the lungs was nothing compared with that associated with the throat symptoms. The pain in the larynx during deglutition was very severe; this, together with the strangling, was almost unbearable. The larynx was brushed with the laryngeal brush, dipped in a preparation of carbolic acid and glycerine, and Apis mel. 3d given internally. The patient was given the following instruction in regard to diet: The food was recommended to be taken in liquid form, viz., milk, beef tea, and thin gruels. These were ordered to be placed in a small pitcher on the floor at the foot of a lounge; the patient to procure a piece of rubber tubing about eighteen inches long, then lie down on the lounge upon his stomach, with his feet thrown up over the arm of the lounge and his face and head over the foot of the lounge, with the left cheek toward the floor; then to place one end of the rubber tubing in the pitcher and the other end in his mouth, and by suction draw the fluid through the tube into the mouth and let it flow along the inside of the cheek and the lower jaw, until it reached the œsophagus; then swallow. With these instructions he went home, querying in his mind what was going to be the result; for he declared that he never heard of such a strange way of eating before.

He was requested to return at the end of one week, which he did, stating that he had experienced no difficulty whatever in partaking of food; and he felt much improved.

The simple explanation for this relief is, that by taking this position the pressure of the atmosphere was relieved from the windpipe, and then from the head being turned to one side, the liquid was directed to one side of the glottis, and could not therefore produce coughing.

The larynx was again examined with the laryngoscope

and found to be in much the same condition as when examined the first time. The same local and internal treatment was continued, as a means of temporary relief, for about one month. The internal treatment was changed to Mercurius vivus.

During the second month another perforation appeared a little to one side the first, which in a few days more had eaten into the first perforation, making one large opening. The progress of this ulceration was quite rapid; by the first of February the whole of the epiglottis was destroyed; but there was no trouble about taking food in the manner previously recommended.

After the epiglottis was destroyed the vocal cords and ventricular bands could be carefully examined, and were found to be more or less destroyed by the process of ulceration.

The first few weeks the patient evidently gained in strength from the increased amount of nourishment he was able to take, and the internal use of Apis removed the œdematous condition of the parts. About the middle of January, 1890, his strength began to fail quite rapidly, and he was no longer able to come to the clinics; so I offered to visit him at his home and thus be able to watch the case to the end, which occurred on the 10th of April. During this time he was given different kinds of medicine, such as Aconite, Arsenicum alb., Bryonia, Calcar. carb., Hyos., Kali bi., Dros., Mercurius bin., and Silicea; all of which were non-effective in bringing about a favorable result. We believe, however, that they were palliative.

This case is not presented to the profession because of the success attending the administration of internal remedies. The writer feels that this part is a failure, and would gladly receive instruction from any member of the profession. It has occurred to the writer that possibly we might get on better if we were more willing to report our unsuccessful cases, and invite a healthy criticism, and receive suggestions from those members of the profession who have met with better success.

One object of the writer in presenting this case is to detail the manner of feeding, thinking that it is possibly new to some, and that if reported it might, through the profession,

reach a goodly number of suffering ones. This method of feeding is not original with the author. On page 317, vol. I., of the *Journal of Laryngology and Rhinology*, London, under the head of Notes, Dr. Norris Wolfenden is quoted, from *The Lancet*, July 2, 1887, as giving the first part of the process recommended, ascribing the discovery to a patient who was suffering from the same disease. A patient of the writer discovered by experimentation that by turning the head to one side during the process of suction, the act of deglutition was more easily accomplished. The writer should state that, from the beginning of this process of feeding to the end of life, the patient had no trouble in partaking food except on the last day, when the throat seemed to be paralyzed.

What the result of proper homœopathic treatment might have been in this case had opportunity been given to so treat the patient from the beginning, we cannot tell; but we are inclined to believe that possibly there might have been an entirely different result, and further we believe that if the partaking of food by suction had been commenced earlier,—that is, by the process already mentioned,—the patient's strength would have been maintained much longer, and thus he would have lived a much longer time.

PRACTICAL CONSIDERATIONS REGARDING THE DIAGNOSIS AND TREATMENT OF ASTIGMATISM.*

BY E. H. LINNELL, M.D., NORWICH, CONN.

This paper was prepared, in outline, at the invitation of Dr. Chisolm, of Baltimore, for presentation to the "International Congress of Physicians," which met in Washington two years ago, Dr. Chisolm being chairman of the ophthalmological bureau of the Congress. I am entirely ignorant as to what circumstance I was indebted for the honor of the invitation, but I have no doubt it was because it became known that my guiding principle in therapeutics is the grand law of "*Similia similibus curantur*," that, after accepting the invitation, and sending, as requested, an abstract of my paper to the secretary, I heard nothing more from any member of the Congress. Possibly, however, it was an oversight, as I believe the title of my paper was announced in the program of the meeting.

The subject was chosen from among those suggested by the bureau, and if it was deemed worthy the consideration of the Congress, perhaps it may not be unprofitable for us to briefly consider the best means for arriving at an accurate diagnosis and a satisfactory correction of astigmatism. I fear my remarks will seem trite, and I shall not presume to criticise the methods of those whose experience is much larger than mine. The conviction has been forced upon me, however, that our busy city specialists sometimes fail to give the care and attention to this class of cases which they de-

* Read before the Hom. Med. Soc., of the State of New York, Oct. 1, 1890.

serve, and perhaps the remarks which I have to make may serve to call out a discussion upon the subject, and an interchange of experience which may be mutually helpful, especially to the writer.

To what extent is it desirable to use atropine in testing astigmatism? Let us consider the advantages and disadvantages of using it. In the first place, what are the objections to its use? It deprives the individual of all use of the eyes for a period ranging from one to three weeks, a circumstance of much importance to many professional and business men. It involves the risk (not to be ignored) of serious eye strain by using the eyes too soon, for near work, while the accommodation is in a transition stage; that is, before the eye has recovered from the effects of atropine. There is danger of prolonged weakness of accommodation, especially in cases in which the accommodation was previously deficient, as it frequently is in simple and compound hyperopic astigmatism. There is danger of constitutional toxic effects, immediate or remote. I could narrate two very unpleasant cases in illustration of this point, but such exceptional instances are familiar to you all. There is danger of torpor retinæ from the effects of too strong light admitted through the enlarged pupil. There is danger of precipitating an attack of glaucoma, where a tendency to it (perhaps latent and unmanifested) exists. There is danger of aggravating a muscular asthenopia. On the other hand, there are many advantages to be derived from the use of atropine. We thereby arrive at a scientific accuracy which we cannot attain in any other way. We ascertain the entire amount of the astigmatism. We distinguish a *pseudo* from a real myopic astigmatism, and unmask a spasm of accommodation, which, if undetected, might lead us into serious error. Scientific accuracy is desirable and should be our constant aim, but the comfort and best interests of our patients should be our first consideration, and it is possible that a too strenuous effort to attain the former may jeopardize the latter. Therefore, while the objections to the practice of paralyzing the accommodation are usually unim-

portant, they are yet weighty enough to make us on our guard against an indiscriminate use of atropine, and to carefully test and weigh every method of examination which promises to yield satisfactory results without its use, such as retinoscopy, the use of the ophthalmoscope, of Javal's optometer, etc. I do not propose to discuss these methods of determining refraction. I hope others may do so. I have had very little experience with them, and while they are undoubtedly valuable as supplementary and control tests, I regard them as less reliable and satisfactory than the usual methods of procedure. The element of spasm of accommodation enters so largely into the question of the determination of the variety and degree of astigmatism, that it ought never to be lost sight of, and should ever be borne in mind in prescribing glasses for the correction of this defect, particularly in myopic and mixed astigmatism. The astigmatism may be wholly apparent, caused entirely by irregular ciliary contraction ; or an apparent myopic may prove to be a hypermetropic astigmatism, and the degree as well as the variety of the defect and the angle of the axis of the correcting glass may be much changed in this manner. For this reason, I deem it unsafe, or at least unwise, to correct a myopic astigmatism without using atropine, especially if it be of low degree. It is also desirable, and often necessary to use it in other varieties of the affection ; but the question arises : Is it desirable to do so as a regular routine practice in all cases of astigmatism ? This question is particularly pertinent, as applied to hyperopic astigmatism. Often we find the result of the test the same before and during paralysis of accommodation. Many times, owing to the nervous sensitiveness of the individual, or to glaucomatous tendencies, or for other reason, we may hesitate to use it. If there is much confusion and uncertainty in the subjective test, if there is much discrepancy between the statements of the patient in the trial with lenses, and the objective tests with the ophthalmoscope, retinoscopy, etc., if there is a good deal of asthenopia, or if the visual acuity is notably deficient,—under these circumstances, we ought not

to neglect to use it, unless there are very decided objections to so doing.

Undoubtedly, much advantage results from the systematic and methodical use of atropine, in cases of astigmatism, and in the majority of cases it is probably wiser to use it, but I wish to enter a protest against the indiscriminate and thoughtless use of atropine. I believe we can dispense with it more frequently by the exercise of more time and patience with equally satisfactory results. On the other hand we should also guard against a hasty and superficial method of examination, which renders us liable occasionally to grave errors.

The next question that presents itself to my mind in discussing this subject is: Whether it is necessary to ascertain the whole degree of astigmatism, and whether the whole degree, as ascertained by the test under atropine, should be corrected in all cases. Let us first consider the question as it relates to hyperopic astigmatism. We do not deem it necessary in cases of hyperopia. We presuppose the existence of latent H., and we do not try to correct the whole amount. Why should we do so when the hyperopia exists in one meridian only? Theoretically, it is desirable to correct the whole degree of astigmatism, thus rendering the eye emmetropic, and this is, as a rule, the most satisfactory practice, but there are many exceptions to this rule. In prescribing correcting lenses for hyperopia we allow a certain amount of it to remain latent. The act of accommodation becomes habitual and cannot be wholly relinquished. Long exercise of the ciliary muscle leads to hypertrophy, and tonic and persistent spasm, which gives rise to no unpleasant symptoms, and which cannot be wholly relaxed. It is nature's compensation for defective structure by increased functional activity, and the attempt to wholly correct it occasions discomfort. We correct only the manifest hyperopia for distance and in addition such an amount of the latent hyperopia for near work as is necessitated by the age of the individual and the nature of the work. The same rules should govern us in prescribing for hyperopic astig-

matism, though with more limitations. A slight degree of hyperopic astigmatism can generally be wholly corrected. Sometimes, however, especially in young subjects, a slight or moderate degree needs no correction. This again depends on the amount and kind of work for which the eyes are employed, and also upon the constitution and temperament of the individual. Frequently, in advancing age, an astigmatism which had previously given no inconvenience, or which had perhaps been entirely overlooked, causes discomfort and demands correction. Irregular spasm of the ciliary muscle is not as frequently seen as that affecting the whole lens, but we often see it, analogous to fibrillar contractions of the external muscles. These irregular contractions diminish the degree of hyperopic astigmatism, or conceal it altogether under the mask of a *pseudo-myopic* astigmatism. As in hyperopia a certain amount remains latent, so these irregular contractions sometimes become habitual and return wholly or in part after using atropine. Therefore it seems to me we cannot arbitrarily correct the whole degree of ah. as revealed by atropine. My practice is to make a careful preliminary examination, and then, if there is no objection to so doing, I use atropine, and if, after paralyzing the accommodation, the record is substantially the same, I prescribe the suitable glass at once. But if there is a marked difference in the results of the two examinations, I wait a few days and make a third examination. If I then find the spasm returning rapidly, I frequently correct only a portion of the ah. Sometimes, of course, it is advisable to continue the use of atropine for a length of time to overcome the spasm permanently. I so often reach satisfactory results from correcting only the manifest ah., that I am growing into the habit of insisting less strongly on the use of atropine in cases in which it is objectionable, but I insist upon several examinations at intervals of a few days, and if I find a marked variation in the refraction at different examinations, I then demand the use of the atropine. I sometimes find also that after recovering from the paralysis of accommodation, the axis of the cylindrical lens must be

varied somewhat, and this makes me hesitate to correct the whole degree of the astigmatism, while the accommodation is paralyzed, without a further examination.

How shall we answer the question as applied to myopic astigmatism? Noyes, in his recent text-book, remarks that "it is rarely necessary to employ atropine in cases of simple or compound myopic astigmatism." I must take exception to this statement. Here I believe the necessity for the use of atropine will have few exceptions, and the element of spasm, both regular and irregular, tonic as well as clonic, plays such an important rôle that we need to exercise great care in prescribing glasses. Sometimes atropine reveals the fact that the astigmatism was wholly apparent, and more often the *apparent* myopic astigmatism proves, in reality, to be a hyperopic astigmatism; but even in these cases the spasm may have become so habitual that it returns after using atropine. We know that actual myopia is developed by persistent spasm of the ciliary muscle and myopic astigmatism owns the same origin.

Usually it is good practice to correct the whole degree of myopic astigmatism at once. The exceptions to this rule are, I believe, much less frequent than in the opposite condition, but we cannot lay down any arbitrary rule in this particular, to be blindly followed, without regard to individual peculiarities. It is usually good practice, but it is not always necessary to ascertain the whole amount of the defect, or to correct it when determined. The same remarks hold true in regard to mixed astigmatism.

Should astigmatism be corrected in all cases? Do not the slight degrees of the defect, one quarter of a dioptric, for instance, often cause as much annoyance as do the higher degrees, and do they not equally demand correction by cylinders? The annoyance caused by slight degrees of astigmatism is of a different kind. They certainly do not cause as much impairment of vision, and thus, in one sense, cause less annoyance, but they are frequently productive of asthenopic and nervous troubles. I think, in this way, they cause sometimes more annoyance than the higher degrees,

because, from the fact of a relatively less degree of impairment of vision, there is more incentive to efforts to correct the slight indistinctness which such errors of refraction cause. This is especially true in reading, sewing, etc., especially where continuous use of the eyes is made. The correction of all degrees and varieties of astigmatism is more imperative for near work, and perhaps more asthenopia arises from continuous use of the eyes for near work with slight than with higher degrees. This is particularly true when the astigmatism is simple. When it is associated with other anomalies of refraction, I believe slight degrees of As. are not so annoying as more pronounced defects.

Should then slight degrees be corrected? This depends upon the amount of inconvenience which arises from this cause. I do not believe that every slight astigmatism should be corrected. Often one becomes so accustomed to a slight defect of this kind that the attempt to correct it is confusing and annoying. This is especially true when it is associated with a higher degree of H. or M. It is frequently satisfactory in these cases to correct simply the H. or M. Often, however, even very slight degrees of astigmatism give rise to much annoyance, such as pain, photophobia, headache, vertigo, and various nervous troubles, and many an obscure and difficult case has been cured by correcting such a defect. Such cases are usually in the persons of neurasthenic females, and in such individuals the correction of slight degrees of astigmatism is demanded as much or more than the correction of higher degrees in less sensitive individuals. Probably slight degrees require correction *less frequently* than higher degrees, but when they occasion annoyance, they should certainly be corrected, and when, after correction of ordinary presbyopia or gross errors of refraction, asthenopic symptoms are not relieved, or when headaches and nervous disturbances do not yield to ordinary treatment, or sometimes, when apparently trivial errors seem not worthy of correction, we shall often be rewarded by a very careful examination under atropine, and add to our reputation as oculists and to the comfort of

our patients. Theoretically, every variation from emmetropia should be corrected. An eye, thus aided, should be more useful than otherwise, but this is not always the case. Due regard must be paid to the age, habits, and temperament of the individual, and to the kind of use to which the eyes are subjected. It would have been interesting to have adduced examples from my clinical records in support and illustration of the points made, but I have refrained from so doing lest the suitable limits of the paper and of your patience should have been overstepped.

A CASE OF OTITIS INTERNA. *

BY HERBERT D. SCHENCK, M.D., BROOKLYN, N. Y.

Since 1860, when Ménière graphically described what he supposed was a functional disturbance of the semicircular canals, there has been much looseness of description in calling all lesions of the internal ear and even some of the drum cavity Ménière's disease. Within a few years a closer differentiation of the pathological condition of the labyrinth has been attempted. The summarization by Dr. Bull of the results of seven autopsies by Gellé of Paris, in which auditory vertigo was present, is partially as follows: That the vertigo attack of an acute type may exist for several years without lesions of the nerve and that it is met with in the most diverse lesions of the middle ear. These lesions of the drum cavity all present the common characteristic of tending to close incompletely the labyrinth by ankylosis of the stapes to the oval window or by obliteration of the round window. That the mobility of one part of the labyrinthian wall is indispensable to the production of abnormal irritation of the labyrinthian nerve. "That an important element necessary to the comprehension of the genesis of the auricular vertigo and its varieties, is the state of reflex hyperæsthesia and hyperexcitability of the acoustic nerve, due to the repetition of local and functional irritation."

Baginsky a few months ago, in a very elaborate paper upon the relation of the semicircular canals to Ménière's disease, comes to the following conclusions:

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* Read before the Hom. Med. Soc. of the State of New York, Oct. 1, 1890.

1. Since at present the name "Morbus Ménière" describes no disease, but only a complexus of symptoms, it would be better to speak of "Vertigo Ménière."

2. Only such conditions should be classed under "Vertigo Ménière" in which attacks of dizziness occur suddenly without known cause, and with distinct intermissions, which are ordinarily quite lengthy, without fever and with more or less intense subjective noises ushering in the attack and with a rapid or only gradually occurring deafness. This excludes the dizziness in mechanical interference with the middle ear as well as the constant dizziness of acute labyrinthian inflammation.

3. That "Vertigo Ménière" can be caused by pathological processes of the brain.

4. Ordinarily it has its origin in some pathological condition of the labyrinth (semicircular canals), primary or secondary.

5. That severe forms of "Vertigo Ménière," those with sudden or rapidly acquired deafness, should be separated from the mild, since the two seem to depend upon different anatomaco-pathological bases.

6. Some cases of severe form may be dependent upon hæmorrhage into the labyrinth; some of the mild forms to a vaso-motor neurosis.

7. We believe too much stress is laid upon the part hæmorrhage plays in explaining "Vertigo Ménière." We would express our opinion that a large number of cases depend upon a phlogistical condition of the blood pressure in the labyrinth (analogous to glaucoma), and that a retarding or stopping of the efferent channels for perilymph and endolymph is a very important factor in this affection.

Whether the case here presented is one of secondary labyrinthian inflammation by extension through the vascular connection between the middle and the internal ears, as was thought when the case was treated, or whether it is one of "vaso-motor neurosis," the writer is unable to say.

Mrs. C., a married lady of fifty-two years, without children,

was referred to me by Dr. Fiske in July, 1888. She is a thin, nervous person, very like her father, who is an Englishman, fond of wine and good living. Her mother has had much trouble with rheumatism for several years. In 1888 she had two strokes of apoplexy, the last causing complete paralysis of the right side. Mrs. C.'s brother has suffered much from insomnia and nervous prostration for the past few years, brought on by business cares and reverses. Her sister has suffered much from neuralgia. Aside from the above the family history is good, and shows no ear diseases of any kind or any dyscrasia.

Mrs. C. has had a weak stomach and obstinate constipation, with hæmorrhoids, since she was a girl. Nervous prostration is the only other affliction that has prevented her from enjoying good adult health. For this she was treated in 1882 and 1883 by Dr. Gray, of Brooklyn, and others. In 1884 she began to have distressing tinnitus in the right ear. When walking she had noticed, some five or six years previously, that she always had a tendency toward the right for half a dozen blocks, after which it would disappear. With the tinnitus this tendency increased, rendering walking difficult without assistance. For this she consulted, at Dr. Gray's suggestion, Dr. Mathewson, of Brooklyn, who pronounced her hearing as ordinarily good, and, she says, declared there was no trouble with the middle ear. If there was any trouble with the internal ear, he told her, he could not detect it. Her nervous trouble growing worse in spite of electrical and other treatment, she was prevailed upon to consult Dr. Allan McLane Hamilton in June, 1887. He pronounced her free from any organic spinal disease, but thought her trouble was a complication of Ménière's disease and neurasthenia. At his suggestion Mrs. C. saw Dr. Noyes, of New York, who pronounced the ear trouble Ménière's disease, giving her a gloomy prognosis. She steadily grew worse under treatment, which was directed, during the winter of 1887 and 1888, against the catarrhal condition of the pharynx by sprays, and to the ear by aspiration with a Politzer bag inserted in the external canal. Finally, in June, 1888, as a last resort, she was put under Dr. Weir Mitchell's treatment for nervous prostration, kept in bed, fed on milk, and rubbed daily by a trained nurse. Six weeks of this prostrated her so much that it had to cease.

At this point I was called in and found the following condi-

tions: She was in the most remote room of the house, to escape as much noise of the street as possible, sitting bolt upright, with the head constantly inclined slightly toward the left shoulder, and held rigidly to prevent any contact with the chair. The face was held slightly toward the left. The head, beside being acutely sensitive to touch, was also sensitive to extremes of heat or cold. The face was pale, and presented an expression of suffering. There was no fever, and the pulse was full and strong, but not increased. The appetite was poor, the tongue coated, and the bowels constipated. Now and then there were attacks of vomiting, accompanied by vertigo, which had been coming with increasing frequency the past year. Sometimes these attacks of vertigo were only of momentary duration and left no subsequent effects; at others they were accompanied by nausea and vomiting, compelling her to lie quietly for several hours. With these there was often blurring of vision, but no abnormality of the eyeball or fundus was found. The plane of gyration was at times horizontal, but more frequently perpendicular.

There was no pain in the head, but an exquisite soreness all over, with numbness and a cold feeling over the whole right half of the scalp. At times she complained of the hair feeling cold to the head; at others as if each particular nerve-point was pricking through the scalp and standing on end. A frontal headache she had at intervals was probably due to gastric derangement.

The ears were exquisitely sensitive to sound, so much so that she could not bear even the rustling of a newspaper, although the deafness was so great that conversation was carried on with difficulty. The H. D. for the watch was 1-40 for each ear, in spite of the fact that she had begun to grow deaf and have tinnitus in the left only a year before. The petrosal hearing was entirely gone for all portions of the head, but the tuning-fork, C_2, was heard several inches from the head, on each side. The membrana tympani were not of the clear luster of the normal, showing slight thickening, but were in very good position. The light spot was fairly clear in both ears. The movements of the membranæ tympani were rather limited, but the test could only be made very moderately, owing to the great sensitiveness of the ears. No inflation of any kind could be tolerated. Once, a year or two previously, when a Politzer bag had been used by a specialist, unaware of her condition, it gave her a most distressing shock and

a sensation of great elongation of the head. She was so prostrated that she had to be sent home in a cab, and did not recover for twenty-four hours.

Mrs. C. was able to distinguish these different sounds in the ears: a loud dull roar, like machinery in motion; a high-keyed, singing, shrill note, and a chirping or buzzing like a mosquito. The loud noise developed soon after she began to have difficulty in walking, and increased as the walking became more difficult. The others had come recently. Friction of the ear upon the pillow or rubbing the forearm produced a croaking or snapping in the ears; the former for several weeks had prevented sleep. Singing or musical sounds produced a disagreeable jumble in the ears; church bells lost all their musical notes and became distressing roars.

The mucous membrane of the pharynx was much thickened and of a dark, lusterless hue. The posterior wall was particularly thickened. There was a history of frequent pharyngitis and tonsilitis, but the tonsils were only slightly enlarged. She was rarely free from exudation from the nares and pharyngeal vault into the pharynx.

With the eyes closed she stood steadily, and was able to walk as well with them closed as open, although this was a most unsatisfactory test, owing to her unsteady gait. The patellar reflexes were both normal.

In the soles, toes, and fingers there was prickling and tingling, aggravated on the right side. The limbs were frequently heavy and were moved with a special effort. Walking was impossible without support on account of the tendency to fall forward, and of the jar to the sensitive head. When she began to walk more freely in a few weeks, it was with a peculiar shuffling gait, with the feet wide apart, the knees stiff, and the body and head held as rigidly as possible. Even then she pitched about much for several months. Mentally she was as clear as ever and passed most of her time in reading or sewing. A urinary examination showed nothing abnormal, and she never had any uterine trouble.

Under remedies and a liberal diet Mrs. C. slowly improved, and in three months was able with assistance to go downstairs and to take short walks in the open air, besides walking about her rooms with little difficulty. Improvement was first noticed in the sensitiveness of the ears, followed by less frequent attacks

of vertigo and lessened tinnitus. In January, 1889, she concluded to try Christian science, in spite of a previous trial and failure. She had also been under one of the most successful faith curists in Brooklyn a few years before. This treatment was continued not less than three times per week for three months, with an increase of all of the troublesome symptoms.

In April I was again consulted for peculiar shocks or thrills extending through the head, of momentary duration, and nearer electric shocks than anything else she could compare them to. With the severest attacks there was nausea and vertigo, but many of them were gone almost as soon as they came. There were no premonitory signs, and frequently they were accompanied by screaming, grasping the chair, and straightening and rigidity of the body, lasting only a few seconds, however. Excepting the nausea and vertigo with the more severe attacks, there were no subsequent sensations, and she was able, usually in a few moments, to resume her former occupation. The first attack came in January, 1889, the second in April. After that they increased gradually in frequency until she had several daily during July. In spite of these the sensitiveness of the ears and head and the deafness slowly improved during the summer, and with this improvement came increased ability to walk. All of these shocks ceased in October, 1889, and the tinnitus and deafness were so improved that ordinary conversation was carried on fairly well; while the ability to walk so increased that she was able to attend to her household duties better than for several years, and could take long walks unattended.

The treatment was necessarily almost entirely medicinal. The Politzer bag, and other means of inflation, caused so much distress that their use was impracticable. The pneumatic speculum could not be used except in a manner that gave little effect.

Coffea was first given to subdue the great sensitiveness and promote sleep. From the aggravation from lying and sitting in a rocking-chair Borax in several of the lower potencies was given without effect. Chenopodium anthelminticum from the 6th to 10 drops of the θ, China mur. and China sulph., Salicylic acid and Natrum salicylicum, Gels., and Arg. nit. were tried successively in the lower potencies without producing any result. Hydrobromic acid in 10 to 15 drop doses four times a day was tried for the relief of the noisy tinnitus, but without result.

On account of her extreme sensitiveness to changes, and because of its successful use in acute cases of otitis interna, Silicea 6th, 30th, and 200th was given, and up to a certain point produced improvement. At a certain point, however, its effect ceased, and no change in potency gave further relief.

Iodine 3 and 6th, with the vapor by olfaction, improved somewhat the catarrhal condition of the pharynx and nares, but failed to improve the deafness or distressing sensitiveness.

After the three months' treatment by Christian science, Bell. was given, and for some time mitigated the frequency and severity of the shocks through the head. Pilocarpine mur. 3 was given an extensive trial without result. Platina 6 and 30 produced an amelioration of the numbness of the head and limbs, and the cold sensation in the scalp, for which it was prescribed. There was also diminished tinnitus. After Bell. failed to control the shocks, Hydrocyanic acid 3 was given in July for ten days, producing such a favorable change that they were never again troublesome. Her general lack of bodily warmth and the now more marked sensation of coldness of the head and hair suggested Ledum, which relieved much of this feeling and further improved the sensitiveness. Alumina was suggested by a colleague because of the vertigo, the dry mucous membranes of the nose and mouth, the prickling and peculiar sensations in the soles and toes, with the entire lack of action in the bowels. It produced much benefit for a few weeks and then the symptoms again suggesting Ledum, it was beneficially used. By the alternate use of Alumina 6 or 30th for a few weeks and then Ledum 3 or 6 for an equal space, the improvement was continuous until in November, 1889, she became so well as to deem further treatment unnecessary.

In reviewing the case a certain train of symptoms are prominent, as those of neurasthenia, which undoubtedly aided the onset of the aural lesion by producing a hyperæsthesia and hyperexcitable condition of the ears. That it was a case of labyrinthine inflammation or irritation probably secondary to disease of the middle ear, is shown when the symptoms of the vertigo due to irritation of the various portions are compared. According to Burnett the invasion was too gradual for primary disease of the labyrinth where the vertigo, tinnitus, and nausea, followed by profound deaf-

ness, which is likely to be permanent from the first, are of sudden onset in an ear previously considered healthy. On the other hand, vertigo due to a tumor on the nerve is of slow onset, with slight symptoms at its inception, which steadily increase to the end without the intermissions found in the other forms. The tumors are apt to be unilateral with a tendency to fall toward the affected side, and with a permanent alteration of the gait. In middle ear vertigo the deafness and tinnitus are great, but are not apt to be so sudden or profound. The vertigo comes in attacks, with temporary alteration of the gait. The above case falls most nearly into this latter form and may have been due to inflammation about the opening of the eustachian tubes and on the promontory, that could have escaped the inspection of the specialists five or six years ago, if circumscribed in extent, but still have produced vaso-motor or vascular changes in the internal ear of extent sufficient to cause the irritation. The round window may have been blocked or the vaso-motor neurosis of Baginsky may be the correct explanation. That pressure from a tympanic vacuum or from ankylosis of the bones was present seemed improbable from the position of the membranes and their easy mobility. It seems improbable that the eustachian tubes were permanently closed and a cause, for long after the appearance of the symptoms, when a Politzer bag was used, it had caused most distressing symptoms in the ears and head.

An interesting point of the case is in again demonstrating that the homœopathic remedy prescribed upon the symptoms is at once the speediest and often the only method of cure. That remedies did effect the cure seems conclusive from the fact that she had grown steadily worse up to the time of their administration, and began to slowly improve as soon as the remedy was given. Again, in the three months she was without them, she grew worse, but again improved when they were administered; steadily continuing to do so while under observation.

THE "GLASS ROD" TEST.

BY H. C. ANGELL, M.D., BOSTON.

I have been using the "glass rod" test of Dr. Maddox of Edinburgh—described by him in the last (May) number of the *Ophthalmic Review*—for some three weeks, and find it handy and efficient. My little rod was set in a metallic disk for me by my optician, and I have had a handle attached to the disk like the handle of the mirror of an ophthalmoscope. Handed to the patient, it is put before the eye in the desired position, without delay, after the first trial.

It seems preferable to the prism, that is, so far as slight movements of the head or rod do not materially affect the result; and in one of my patients it showed a latent exophoria of one degree, when the prism test showed no deviation.

A CAUSE OF FREQUENT VOICE TROUBLE IN THEATRICAL PEOPLE.*

BY LOUIS A. BULL, M.D., BUFFALO, N. Y.

Having frequently to treat "professional people," more particularly those upon the comic opera stage, and having found a peculiar form of pharyngitis extremely common amongst them, I have been led to make inquiries and some personal observations with a view to discovering the cause.

Let us glance at the conditions under which a singer in one of the popular comic opera companies does his or her work. Some hours of each day are spent in a little "cubby hole," dignified by the name of dressing-room, which is tucked off under the stage or in any place where nothing else could be put. This room is usually almost totally lacking in ventilation, and for heat and light depends upon a flaring gas-jet. What little oxygen may have filtered in during the hours in which it is unoccupied is speedily burned, and the unfortunate occupants "make-up" in an atmosphere of dilute carbonic acid gas. After remaining in this place for a varied length of time, the singer, in abbreviated costume, with skin and mucous membrane thoroughly relaxed, often in a profuse perspiration, steps upon the stage and is exposed to its draughts. Nor is this all the bad air they have to breathe; the "spectacle" usually requires some tableaux, made brilliant by red fire with its stifling fumes. After the performance they frequently hurry to the train and spend the night in the blissful atmosphere of a sleeper.

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* Read before the Hom. Med. Soc., of the State of New York, Oct. 1, 1890.

Here, then, is the *fons et origo mali:* the draughts of the stage, the frequent changes of temperature, the irregular meals, the exposure to storms, for which they may be unprepared, on getting out of trains in the early morning; all these work upon a soil specially prepared in the dressing-room.

To this, in my mind, is due the breaking down of fresh, strong voices shortly after the opening of the season.

As I have shown, the singer comes on the stage with the throat congested and relaxed from breathing the irritating air of the dressing-room; the effort to sing is a forced one, the congestion is still further added to, and a sore throat results; this they try to treat with various cough syrups and stock prescriptions; keeping on with their work until nearly voiceless.

As I have seen them, these cases present the following appearance: Tongue gray and flabby; the soft palate much relaxed and deep red in color, the pillars of the fauces the same; the tonsils are flat, enlarged, flabby, and much congested; the pharynx from vault to larynx hangs loosely in ridges and is of a deep, bluish-red color, large veins appearing here and there on its surface, with some swollen follicles. The larynx in the majority of cases is affected, if at all, merely by continuity, and may present a slight congestion down to and upon the vocal cords. They give a history of frequent headaches, loss of appetite, confined bowels, and restless sleep. They cannot give up their work, and yet it is plain that unless relief is given they cannot go on with it. As the conditions, while they are on the road, cannot be changed much, and as it is their desire to be put in the best shape possible to fill out the balance of the season, I have become accustomed to carry out the following line of treatment: The throat is first thoroughly douched or gargled with water as hot as can be borne, then sprayed with a 25 per cent. solution of aqueous pinus canad. This is repeated several times a day, absolute rest for the parts being strictly enjoined; liquid food of the most nourishing character is given at three hour intervals. In-

ternally I usually begin the treatment with frequent doses of Merc. sol. 1x, continued until the liver and bowels are thoroughly freed, which also relieves the congestion in the throat. I follow this with any remedy that may be indicated, which with me, and in the cases I have seen, is more often than not Ferrum phos. 3x, given in hot solution. This remedy covers the anæmia, and the relaxed condition of the system generally, better than any agent that I am familiar with: it prevents the liver and bowels from becoming sluggish again under the forced feeding, keeps the tongue clean, and clears up the pharyngeal irritation.

Until adopting this method of treatment, based upon the above cause of the condition, i.e. mild carbonic acid gas poisoning, I could recommend nothing but enforced idleness to these people (which meant no pay). Under it, however, a few days' rest generally puts them in shape for work, which is to be gradually assumed. They are usually astonished when informed of the true cause of their trouble, laying it to catching cold on the stage or getting wet to or from a train. A word-to-the-wise with them causes a demand for better ventilated dressing-rooms and better personal hygiene. In continuation of the above course, for these patients remain with one but a short time, I usually give Calcarea phos. as a tonic remedy, and my reports show that it completes the cure.

NOTES ON THE SHADOW-TEST.*

BY E. J. BISSELL, M.D., ROCHESTER, N. Y.

Of the several objective methods of dioptometry, none which possess accuracy and are practical in every day practice have been so slow in receiving recognition and adoption as the shadow-test. The usual progressive spirit and eagerness to possess the best and attain perfection which generally characterizes ophthalmologists, has not been manifested toward skiascopy. Certainly the cause for this is not with the method itself. It is scientific; it is practical; in its sphere of application, it is accurate; and under certain circumstances it is superior to any other one method. There are several reasons for its slow adoption, especially by American oculists. It has been poorly presented in our text-books; some very important details have either been omitted or incorrectly stated—such as the character of the light, the use of mydriatics, the direction in which the patient is to fix his eyes, etc.; conflicting theories regarding the optical principles involved have given rise to a multiplicity of names; the confusing of the shadow-test as usually practiced (depending upon the revolving of the ophthalmoscopic mirror upon its axes) with Dr. Jackson's method, (depending upon the distance of the mirror from the patient); the weight of influence of a few ophthalmologists who have been especially proficient with the direct method has been against it; a lack of the best instruments for its

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* Read before the Hom. Med. Soc. of the State of N.Y., Oct. 1, 1890.

easy and rapid application; these and other reasons have caused many to believe that skiascopy, if it were not unscientific, at least was impracticable.

Briefly, I desire to set forth the advantages of the shadow-test. First, any form of ametropia can be quickly detected by it and under favorable conditions accurately estimated. Particularly is it useful in astigmatism, and I have found it superior to the direct method. The meridians of greatest and least refraction can be detected by the rotation of the mirror upon its vertical or horizontal axis, even when these meridians are oblique.

Second, in children and the illiterate it makes our refraction work comparatively easy. Especially in children who will not keep their eyes at rest during an examination do we see its advantages over the direct method. An amount of motion of the eyes, as in nystagmus, that would make it impossible to do satisfactory work by the direct method, does not, I find, materially interfere in the shadow-test.

Third, in amblyopia we can correctly determine refraction, and in leucoma sufficiently dense to prevent testing the refraction by the upright image, I have been able to use skiascopy quite satisfactorily.

Fourth, it is more easily performed than the direct method by the young oculist, who cannot readily relax his accommodation.

In my practice I have found the following conditions essential for the successful employment of the shadow-test: First, a very dark room and the source of illumination properly placed and shaded. I have seen skiascopy practiced using as a light an ordinary gas flame or student's lamp, with no metal chimney surrounding them to prevent them from more or less illuminating the whole room. I have read articles describing just such a light. It is possible to determine the refraction of an eye when a light of that character is used, but the finest and most accurate results cannot be attained. A metal chimney should surround the source of illumination with an opening in it only large enough to emit light from the center of the flame. The nebulous effect at the

edge of the flame will thus be cut off; the room will be kept darker; and, as a result, the contrast between the red reflex of the retina and the dark shadow produced by the rotation of the mirror will be more pronounced. The light should be just at the side or above the patient's head.

Second; a good ophthalmoscopic mirror, plane or concave, with a small opening three or four mm. in diameter, is necessary. The distance from the patient at which the plane mirror should be held is about ten feet; and when a concave one is used the distance depends upon the focus of the mirror. Each oculist must learn from experience with his own instrument what that distance is. As the mirrors are generally made, thirty to forty inches would be about the average.

I have also found the skiascopic disk of Burnett a wonderful aid in performing the work easily and rapidly. It has lately been improved by Wurdeman. When the trial frame and lenses are used, I confess there is some ground for the complaint that the work consumes too much time. But with the lenses in a disk in front of your patient, that objection is removed.

Third; regarding the necessity for using mydriatics, my experience differs from some who use skiascopy. Some ophthalmologists, in their enthusiasm for the test and effort to commend it to others, have, I think unwisely, claimed that a mydriatic is not essential. I believe that in the majority of cases under fifty years of age the employment of some mydriatic is necessary to attain the greatest possible accuracy. Nor do I believe that this necessity detracts from the merits of skiascopy. I believe in using mydriatics, even in the subjective examination. If they were more wisely selected and generally employed, oculists would make fewer mistakes, especially in astigmatism. My reasons for using mydriatics in skiascopy are, that with a small pupil the test cannot be worked to perfect satisfaction, and that an active accommodation does somewhat modify the result. My rule has been, in cases suffering decidedly from asthenopia, unaccompanied by marked exophoria, to use atropia. If there is

esophoria, the indications for its use are increased. In all other cases requiring a mydriatic to affect the size of the pupil and relax the accommodation, I use a two per cent. solution of homatropine and cocaine. I employ the atropia in the cases indicated for two reasons; first, it is the very best therapeutic agent that can be used in these cases; second, the eyes more readily accept the prescribed glasses after its use. I use the homatropine and cocaine solution in the majority of cases, and have found from a series of experiments that my refraction results are not materially different from when I used atropia. After having completed my examination, I apply one drop of a solution of eserine and the patient is able to use his eyes in a short time.

The advantages are so great and the disadvantages so slight that I do not hesitate to use the homatropine followed by the eserine in most of my cases. In the shadow-test a medium rather than a maximum dilatation of the pupil is best.

Fourth; the last and perhaps the most important point I wish to set forth, is regarding the direction in which the patients are to fix their eyes. I have them look at my eyebrows, above that eye in front of which I hold the mirror. This will give the measurement of the refraction in the region of the macula lutea. Some ophthalmologists have the patient look past the side of their face and make the measurement at the optic disk. I think this is a mistake. I admit that if a mydriatic is not employed it is more easy to get the shadow when the eyes are so turned as to bring the white reflex of the optic disk into view. But the correct ametropia cannot be ascertained at that region. The plane of the disk in relation to the surrounding parts is constantly subject to physiological and pathological variations and irregularities. Knowing this to be true it certainly is incorrect to test the refraction at this point. Loring in his text book of ophthalmology, page 113, states that a variation of one quarter of a mm. in the optic axis produces a difference of one dioptric in the refraction. For some time I have been testing my cases both at the macula lutea and the optic

disk, and I have found that my results as taken at the macula corresponded with the refraction as discovered under the full effect of atropine; and that these same results differed from those taken at the optic disk by one quarter to two dioptrics. The glass as indicated by the refraction taken at the disk would in hyperopia be too weak, and in myopia, too strong. In conclusion, let me repeat what Dr. Hasbrouck emphasized in his article in the JOURNAL OF OPHTHALMOLOGY, OTOLOGY AND LARYNGOLOGY of last year: Perfect yourself in the correct and scientific way of making the shadow-test.

THE USE OF COLORED GLASSES IN OPHTHALMIC PRACTICE.

BY W. P. FOWLER, M.D., ROCHESTER, N. Y.

As one walks down street in any of our large cities on a bright afternoon, he cannot fail to notice the great number of people who wear colored glasses. Dark blue seems to be the favorite tint, but many smoke-gray glasses are also seen. Occasionally the old-fashioned green spectacles are used. The shape and size of the glasses vary greatly. With men, the large coquilles are most often worn, while ladies seem to prefer the small, flat glasses, set in eye-glass frames. Some of those who wear these eye protectors have not consulted an oculist, but purchased the glasses because "so many others use them who have weak eyes." They get along, for the time being, without going to the expense of consulting an eye specialist, and the cost of the glasses is not much, as one can readily see by glancing in at the cheap jeweler's window, where a large display is made, and a conspicuous label tells the passer-by that he can take his "choice for twenty-five cents."

Nearly all of these cheap glasses are unfit for any one, save a blind man, to wear. They are purchased and worn under the supposition that they do not change the direction of rays of light as they enter the eye—in short that they are plane glass—but if we take the trouble to examine them we find that very few are non-refractive.

The coquilles, or spectacles shaped like watch glasses, usually disperse rays of light—often irregularly. They are very trying, especially to the emmetropic and hypermetropic eye. Some of these curved glasses are an optical curiosity, as they are a mixture of almost everything—

prism, concave spherical, plus or minus cylinder, etc., varying in different portions of the glass, which is "wavy" and full of specks and bubbles. Not only the cheap, but a large share of the high-priced coquilles are objectionable. Even those that are ground are usually imperfect. The glass is of better quality, but no patient should be allowed to wear these or any other colored spectacles or eyeglasses until on examination they are found to be unobjectionable.

It seems remarkable to me that the ophthalmologist does not always forbid the use of imperfect glasses. In these days, when slight refractive errors are so carefully corrected, because it is found that most distressing symptoms often result if this be not done, how is it that patients who are suffering from some disease of the eye are allowed to wear colored glasses that, instead of being non-refractive, are irregularly concave or convex, and so distort objects that they appear hideous. A well eye would soon suffer from such abuse. How much greater must be the injury done to an eye that is already diseased. I think the only excuse is carelessness; not having given the matter any attention.

The flat glasses, being more often free from blemish, are less liable to prove injurious than coquilles; but the latter are undoubtedly the best protective glasses made, provided they are not defective. The large, flat, oval glasses do fairly well, but there is a space above, below, and at the temples where light is admitted to the eye, so that the peripheral portions of the retina are not shaded. Large round glasses answer the purpose somewhat better, but are unsightly, and ladies often object to wearing them. Small oval glasses are worse than nothing, because only the center of the visual field is shaded, and the sharp contrast between bright sunlight and the dim portion covered by the glass is exceedingly trying for the eyes.

As to color, I think the medium shades—3, 4, or 5 of smoke-gray glasses—are best. Very dark tints are, for a number of reasons, not good; the patient by endeavoring to distinguish objects through them strains and wearies his eyes, and on taking off his spectacles the contrast is so

great that normal illumination can scarcely be borne. In sunlight, especially in summer, these dark glasses absorb heat, and thus prove injurious. Cases of phlyctenular keratitis, ulceration of the cornea, and marginal blepharitis are often aggravated and prolonged in this way.

The lightest shades of smoke glasses do not cut off enough light to be of much use, and those that are of a very light blue are objectionable as they give objects a white and glaring appearance that is anything but pleasant.

Theoretically, blue glasses of medium tint are usually best, as they cut off the orange rays of light which are supposed to be most irritating to the eye, but so far as my observation goes these glasses are injurious. The same may be said of the yellow spectacles advised by some authorities in anæsthesia of the retina.

Ten or twelve years ago it was my practice to prescribe colored protective glasses frequently, as advised in the text-books, but of late I rarely do so, and find that my patients do much better, in most cases, without them. I am convinced that they often retard the cure, especially if worn, as many wear them, continuously. Blue, green, and yellow glasses cut off certain rays of the spectrum and render the light admitted to the eye abnormal and artificial. If worn for any length of time the eye must accustom itself to an unnatural condition, and, when the glasses are removed, some time is required for the retina—which has been rendered over-sensitive—to adapt itself to the normal sunlight.

When smoke-gray glasses are used, objects are seen in their natural color, but the light is subdued as at dusk, or on a cloudy day. In some cases of inflammation of the optic nerve, retina, or choroid, where perfect rest of the diseased structure is desired, or when the light reflected from snow or a sheet of water is painful, I direct these glasses to be worn, but taken off on entering the house or any shaded place. It is my belief that there is altogether too much fear of light in the treatment of eye affections, and that the time is near at hand when colored glasses will be very largely discarded.

DIFFUSE CELLULITIS COLLI, WITH ABSCESS.*

BY CLARENCE E. BEEBE, A.M., M.D., NEW YORK.

During the afternoon of Tuesday, March 18, 1890, a lady, about forty years of age, presented herself at my office, complaining of a moderate degree of pain on the left side of the throat, whenever the slightest effort at deglutition was made. During the intervals between said efforts, she experienced an aching sensation, accompanied by considerable burning and smarting, which last appeared to extend into the pharyngeal vault and radiate in the direction of the left ear.

Constitutional symptoms were pronounced and evidenced by general malaise, pains in the lumbar and post-cervical regions, and so-called neuralgic lancinations in different portions of the body. Cephalalgia, to which she was subject, was present and occasioned much suffering, especially in the supra-orbital region.

On inspection of the pharynx, the mucous membrane was found to be anæmic, everywhere, except where it covered the left tonsil and the structures in its immediate vicinity. Here the color was somewhat darker, although, under ordinary conditions, one would not dignify the condition with the designation of hyperæmia. It was hyperæmic by contrast only. The left tonsil appeared somewhat more prominent than its fellow, and presented, here and there, three or four very small follicular deposits at the cryptal orifices, said deposits being easily removed by means of the probe. One of the cervical glands upon the same side was a little enlarged and sensitive to pressure. Temperature 103°; pulse, 120.

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* Read before the Homœopathic Medical Society, State of New York, Oct. 1, 1890.

I have noted so many instances of so-called rheumatoid lesions of the constituent elements of the pharynx, its adnexa, and of the larynx, which have been characterized by a color of the parts implicated, by no means commensurate with the concomitant suffering, that I am almost invariably inclined to anticipate the discovery of the history of rheumatism, with either local or general manifestations, whenever a case of the nature described comes under observation. Accordingly, in the present instance, my first impression was that I had a case of so-called rheumatic tonsillitis to deal with ; an impression, however, which was speedily dispelled by the facts elicited by further investigation.

During the entire month of March an unusually large number of cases of follicular tonsillitis came under my notice, but in nearly every instance the cases were extremely aggravated in both local and general symptoms. The one manifestation in the present case that caused me to feel uneasy was the glandular lesion, and in view of its presence, and because of the fact that on several occasions in my experience true diphtheria has developed in cases which presented just such indefinite throat symptoms as the one in hand, I examined every portion of the mucous covering that could be reached by extraordinary as well as ordinary means of precision at my disposal, but without result, further than that already noted. It is true that, at this time, the temperature, 103°, was higher than one would expect to find in the early stage of diphtheria, but the character of the pulse, its rhythm, volume, etc., evidenced the possibility of a grave constitutional implication. The peculiar ashen hue of the superficies, especially of the face, coupled with an expression of intense anxiety, certainly appeared to afford a measure of credibility to the diphtheria hypothesis. The lady was a stranger, and subsequently, after restoration to her normal standard of health, I found that the foregoing was her customary condition, and had been such since childhood.

The conclusion finally reached proved the correct one.

She was suffering from a mild attack of follicular tonsillitis, complicated by a somewhat unusual swelling of the cervical glands, and accompanied by constitutional symptoms of more than ordinary severity.

Under the influence of the usual remedies, the tonsillar lesion disappeared within twenty-four hours, and with it all symptoms associated directly therewith. On the other hand, the glandular engorgement became gradually more and more pronounced, until by Saturday evening the entire left side of the neck was enormously swollen, the engorgement extending down from the rim of the inferior maxilla to the clavicular prominence. The submaxillary bodies became implicated, together with the entire cellular tissue of the neck, on the left side—in other words, the condition now was that of typical cellulitis colli. Although a very slight degree of redness could be detected, on close investigation, over the site of the initial swelling, and the entire superficies was exquisitely sensitive to even moderate pressure, there was not a single evidence of fluctuation. The neck, as a whole, was absolutely immobile, and this rigidity interfered very materially with the patient's comfort during both day and night, and, during the latter, rendered sleep in the recumbent position almost an impossibility.

I saw her late Saturday evening, and all symptoms at that time were as noted. Sunday noon I visited her, and, to my astonishment, found her lying comfortably upon her back, with the swelling almost gone, and with it all redness, tenderness, and rigidity. She expressed herself as feeling entirely well, and fully expected to be out of bed and dressed in a day or two at the utmost. I naturally sympathized with her in this opinion, but cautioned her to avoid running the smallest risk of exposure to cold, etc., as my experience with these cases had led me to be extremely careful at this stage in relation to exposure, etc. I have invariably found such patients painfully susceptible to the mutations of temperature, atmosphere, and the like. In this case I was particularly solicitous, because of the inception of the menstrual flux. She had always suffered intensely during menstruation, and was in the habit of remaining in bed during the first twenty-four hours, not so much because of the pain, which was invariably present, but on account of her extraordinary predispo-

sition to "*catching cold*," as she expressed it, the slightest exposure always resulting in an attack of illness,—which at times, and under certain conditions, became really serious in its outcome.

On Monday, progression toward recovery still continued, the only deviation being a slight attack of gastric irritability, the result of too free indulgence in milk punch. Tuesday morning early I was urgently summoned to attend her, but for a variety of reasons found it impossible to visit her before one o'clock P. M. She was then sitting up in bed, experiencing great difficulty in respiration, both expiration and inspiration being interfered with very materially. She could swallow nothing, the smallest effort at deglutition being attended by agonizing pain. The cervical swelling had returned to the condition which had characterized the period of the greatest aggravation. Temperature, 104°; pulse, 130. She experienced sharp lancinating pains over all portions of the swelling, and the flush, which before had been so slight as to be almost indiscoverable, now covered a considerable area and appeared to be extending.

Examination of the pharynx and larynx was rendered almost an impossibility by the rigidity of the maxillary articulation. She could open the mouth not much more than one inch to one inch and a half, for the same reason. After repeated efforts a fairly satisfactory inspection was made, and revealed enormous enlargement of all the structures on the left lateral aspect of the pharynx, the mass of infiltrated tissue extending considerably beyond the median line and the œdematous uvula resting upon its superior border at an angle of about forty-five degrees. The mirror disclosed downward extension of the swelling, the latter pushing the swollen epiglottis to the right, causing it to fold upon itself, and implicating the ary-epiglottic fold, the constituent elements of the hyoid fossa, and the ventricular band, which completely covered the vocal band and narrowed the glottic lumen almost to the point of obliteration. In a word, the entire tissue-infiltration within appeared to correspond, as far as could be seen, with that without, and placed the patient in imminent peril of complete closure of the glottis, thus rendering the operation of tracheotomy something more than one of the possibilities of the near future.

Had the sequel compelled the resorting to this procedure, a moment's consideration of the concomitant conditions

rendered the danger attending it very palpable if it did not suggest its absolute futility. Reasoning from analogy and basing conclusions upon close observation of the extent to which the swelling had progressed downwards, it would have been certainly fair to have inferred the possibility if not probability of infra-glottic and tracheal infiltration. Had this transpired, the only possible relief would have been derived from very low tracheotomy, and very probably even this would have availed little or nothing.

So much for the existing condition. You will readily recall to mind the aspect of things, the day previous. What had been the cause of this complete transformation?

Notwithstanding the precautions taken and insisted upon in relation to the avoidance of exposure of every description, the patient early Monday morning left her bed, proceeded into the bath-room, which was at some distance from her own apartment, completely divested herself of all clothing, indulged in a cold sponge bath, and concluded the operation by a sitz-bath in cold water. While thus engaged, the soiled sheets were removed from her bed, and clean ones just out of the wash substituted,—an entirely proper procedure had the latter been thoroughly aired and warmed. Unfortunately they were not only cold, but palpably damp, a condition of things quite characteristic, I am informed, of the apartment house which happened to be her habitat at the time of her illness; one of the best known and most fashionable on the avenue. Were a greater degree of precaution observed in matters of this description by both physician and patient, the issue in many cases of illness, whether severe or mild, would be far different from what it frequently is.

Contact with these damp sheets, following the inexcusable exposure referred to, induced a sharp chill, which for some little time defied every effort put forth to control it.

The enormity of this complete disregard of the first and simplest principles of common sense, to say nothing of disobedience to specific orders, will be more thoroughly and readily appreciated, when not only her condition in general is taken into consideration but when it is remembered that menstruation had begun that very morning. It was not until the following day that the foregoing particulars came to my knowledge. The change

for the worse was then so palpable, startling, and unexpected, I naturally sought for an adequate solution of the mystery. Said particulars were disclosed, in response to my queries, through the medium of the patient's relatives. *She* was disposed to assign everything to an attack of gastric irritability from which she had suffered early in the day.

Whatever the cause, the existing condition was an extremely precarious one, and demanded prompt and decided measures to combat and overcome it. The real danger lay now in the rapid downward and lateral progression of the tissue-infiltration, within the cavity of the larynx and trachea. The external swelling, although certainly extending, could safely, for the time, at least, be left to itself.

Not many days before this I had been summoned to see a gentleman suffering slightly from difficulty in respiration. The attack had made its appearance suddenly, without the slightest premonition, after rather extraordinary exertion in singing. If my memory serves me, an attempt had been made to reach a point in the register considerably above that to which he was accustomed. He experienced, almost immediately, a sensation as if something had given way within the larynx. This was succeeded by a condition of choking and suffocation which became more and more pronounced. The mirror revealed an œdema which implicated all of the constituent elements of the larynx and was manifestly extending along the lateral folds of the epiglottis. The worst feature of the case, and the one that occasioned the gravest anxiety, was the fact of indubitable progression. Measures were at once instituted to stay the onward march of the œdema and remove the deposit that had already taken place; and, for nearly three hours, I watched the patient, with everything in readiness to perform tracheotomy—to the probable necessity of which, every indication pointed. Fortunately, milder measures prevailed, and the attack passed off almost as rapidly as it had come on.

The remembrance of this experience, and of others of a similar character, not only intensified my anxiety, but served

to stimulate me to devise and adopt the most active measures for the relief of the case in hand.

Poultices of flaxseed meal were applied to the neck as hot as could be borne and replaced by others at short intervals, and although other measures were of course instituted, with more or less effect, these poultices certainly proved to be more efficient in eventuating the relief that was finally experienced than any of the many and varied devices adopted.

Just here permit me to refer very briefly to one of the many practical lessons to be derived from the study of this and similar cases. Whenever œdema of any of the constituent elements of the larynx and adjacent structures has its beginning *within* the cavity of the larynx, whatever the originating cause, poultices, hot applications of any and all kinds, inhalations of steam, and other measures of the same class, in my experience, certainly tend to aggravate existing conditions. I consequently avoid them as dangerous in the highest degree. On the other hand, if the œdematous process is either the result of injury to the external tissues of the neck or is the result of extension from *without*, the measures cited are among the most satisfactory at the command of the surgeon. The foregoing constitutes a fact of great importance, and one to be kept in mind, for the reason that in all cases of œdema implicating, whether primarily or secondarily the larynx and its adnexa, the surgeon is compelled by the very exigencies of the case to think and to act with the rapidity and assurance which are the natural outgrowth of his confidence in the measures at hand.

During the day, while no improvement was evident in even the smallest particular, the œdema did not progress after the first hour or two. The patient continued to suffer greatly from dyspnœa and from the pain, etc., incidental to each attempt at deglutition. The latter finally became almost unbearable; and the tenacious, albuminoid secretion, which is an invariable attendant upon œdema of mucous tissues, had to be mechanically extracted from the mouth and pharynx, in order that the necessity

for the otherwise frequent acts of swallowing might be removed or at least lessened.

My friend Dr. W. S. Pearsall kindly consented to remain with the patient during the evening and night, in readiness to operate should a sudden emergency arise. Fortunately nothing of the kind transpired, and early on Wednesday, improvement became positive, and as the day advanced, the tissue infiltration *within* rapidly subsided and with it all immediate danger.

The external infiltration, however, grew speedily worse and extended in almost every direction, while the patient's general condition became more aggravated than at any period of the attack. The cervical tissue on the left side, from a little above the mastoid process to the supraclavicular space inclusive, became as hard and unyielding as a solid mass of brawn, the infiltration nearly reaching the spine posteriorly and extending quite to the median line anteriorly. The normal outline of the neck—an unusually thin one in health—was completely obliterated, as the swelling was on a level with a line passing from the lower lobe of the ear to the external articulation of the clavicle, and gradually extended downwards on the chest until it reached the nipple. The skin, dry and glistening in consequence of the extreme degree of tension, presented only three points of redness—one at the site of the original glandular swelling, the other two about two inches below the inferior border of the left clavicle.

These three points were exquisitely painful, particularly the superior one. Those below, after the first day, constantly changed their location, invariably remaining below the clavicle, however.

The case had now clearly been transformed for a second time into one of diffuse cellulitis colli, and, while not necessarily alarming, it presented certain possibilities which might under certain conditions give rise to anxiety and demand active measures for their amelioration. The cellular implication had extended so widely, and appeared to penetrate so deeply, suppuration at one or more points seemed almost a necessary concomitant. The most careful investigation failed to reveal the slightest indication of fluctuation anywhere, although the possibility of its existence was suspected at the *locâle* of the old glandular swelling. Very speedily, the constitutional symptoms of pus-formation began to manifest themselves, and became more and more pro-

nounced until Wednesday, April 10. On that date pus was detected in the glandular enlargement, the accumulation being scanty, and located at a considerable distance from the surface. The next day it could be found with less difficulty, although the quantum evidenced little or no augmentation. On Friday, at my earnest solicitation, the patient consented to see my friend Dr. Doughty in consultation. He confirmed the diagnosis, and concurred in the recommendation to operate. I accordingly incised the abscess and evacuated about one drachm of thin, sanguinolent pus. The probe failed to reveal the slightest evidence of a deeper penetration of the accumulation than appeared on the surface.

From this time on improvement was rapid and pronounced until April 23, when she was discharged, cured. On that date the only evidence of the disease remaining was a hardly discernible cicatrix at the point of incision, surrounded by a slight degree of induration, with a little reddish discoloration of the superficies. The patient's general health has since greatly improved in every particular.

Already have I overstepped my proper limits. Consequently, the many points of practical interest, which are naturally evolved from or suggested by the study of a case like that under consideration, must of necessity be left, for their adequate development and elucidation, to the discussion which, I earnestly hope, may follow the reading of this inadequate paper. To one or two matters relating to the remedies employed, it is my duty to refer very briefly.

Prior to the exposure, which was followed by so lengthy and varied a train of sequelæ, improvement in the glandular swelling, you will remember, was rapid and pronounced, and without the smallest doubt recovery would have taken place then and there had it not been for the circumstances cited.

The remedy which appeared to be *the* efficient factor in eventuating such satisfactory issue was Calcarea fluorica, in the sixth decimal trituration. Its effect was prompt, and as manifest as it was prompt. An experience with a large number of cases of glandular engorgement, acute in charac-

ter, with no signs of pus-formation, but with the possibility of its evolution in the near future, has caused me to impose such great confidence in the remedy as to render it almost obligatory for me to prescribe it in such cases, provided, of course, there is nothing to counter-indicate its exhibition. The instant a symptom of pus-formation becomes manifest, its efficiency ceases, and the proper substitute must be sought for. Sulphide of Calcium, either in the first decimal trituration, or in one-tenth grain doses of the crude drug, is the remedy *par excellence* when pus is imminent. In my hands its influence is far more satisfactory in every particular than Hepar sulph. Certainly its efficiency in the treatment of the case we are considering was remarkably prompt and thorough. If it be administered sufficiently early, it will surely abort the entire process, and resolution will take place without a sign of the presence of pus. Should it fail to accomplish this, it will unquestionably accelerate pus-formation and inaugurate the reparative process with a thoroughness and rapidity most satisfactory to both physician and patient. One singular effect is its influence upon the evolution of the slough which accompanies deep abscesses and carbuncular lesions. Said slough, in both forms of disease, is either caused to entirely vanish, or is reduced to such inconsiderable dimensions as to be of little or no importance whatever. Should the slough be present, under the influence of this remedy it can be detached without the slightest difficulty, while the resultant cicatrix will be so small as to be hardly discoverable. What is said here in relation to this remedy is not theoretical in the smallest degree. The statements are based upon an experience which has taught me many valuable lessons. In cases of abscess, when Hepar sulph. has been the indicated remedy, the moment the abscess cavity has been evacuated of its contents, the customary procedure is to discontinue the Hepar and substitute Silicea, or a remedy of similar action. In the case whose history has been cited, in pursuance of this custom, Dr. Doughty suggested the substitution of Silicea in place of the Sulphide of Calcium after the opera-

tion. The sulphide had done so well up to this point, and my own experience with the drug in other similar cases had so frequently induced me to make no change, we decided to keep on with it to the end ; provided, of course, no counter-indication transpired demanding a change. The sequel was more than satisfactory. I regret the impossibility of a brief reference to the efficiency of the Arsenate of Quinine, 2d decimal trituration, in cases of œdema of the larynx, due to extension from without. In this, as in other cases, one occurring as recently as last week, its beneficial effects were surprising.

TWO CASES OF FRACTURE OF THE PETROUS PORTION OF THE TEMPORAL BONE, WITH RECOVERY.

BY F. G. RITCHIE, M.D., WILMINGTON, DEL.

R—— P——, aged sixty-four, Wilmington, Del., was brought to the Homœopathic Hospital, Dec. 11, 1889, having been found lying in the street, insensible. On admission, he was in a comatose state, pupils contracted, hæmorrhage from the right ear and from the nose, stertorous breathing, and vomiting of blood and bile. There were no other evidences of a blow or fall, although they were carefully sought for. He was put on Opium 6x, and milk punches.

Dec. 12. Morning temperature 101°; pulse 91 ; respiration 28. Evening temperature 101$\frac{2}{5}$°; pulse 80 ; respiration 24.

Dec. 13. Morning temperature 101$\frac{2}{5}$°; pulse, 84; respiration 28. During the day there was a radical change in his condition. He became delirious, with a desire to escape. The remedy was then changed for Belladonna 6x.

Dec. 14. The delirium having been controlled, and there being no special indications for any remedy excepting Arnica, that remedy was administered in the sixth decimal potency.

I omit the record up to the 26th inst., as his condition remained about the same up to that time.

Dec. 26. I was called in consultation by the attending surgeon, and, on examination, found a brownish-yellow discharge from the right ear, with a putrid odor. After cleaning the canal, I discovered a break, about four centimeters long, in the tissues covering the roof of the bony portion of the canal, at a point where it passes over into the posterior wall, and close to the membrana tympani ; its direction coinciding with the axis of the canal. The cavity of the tympanum was filled with a bloody fluid, as was

evidenced by the color of the membrane, to which was imparted a visible pulsation. The membrane was, to all appearances, intact. He complained of pain upon moving the jaws, and was unable to separate them but about an inch. There was also partial left hemiplegia. I examined the eyes, but found no ophthalmoscopic symptoms. There was present a peculiar form of amnesic aphasia. On being asked the question, "How do you feel today?" he would appear startled, as if suddenly aroused, and after the lapse of two or three seconds would slowly reply "I feel pretty, er, er, *fasset.*" Whenever he hesitated about a word, it was supplied by the above word "fasset" at first, but was, a little later, varied to "sumset" or "swasset."

From the character of the discharge, I recommended Thuja, and it was further strengthened by the mental symptom of that drug, "cannot think, talks slowly, as if hunting for words; uses wrong words;" and the symptom found under "Nerves," "Paralysis of one side." He was accordingly put upon Thuja 6x, and directions given to clean the auditory canal twice daily. The result was striking: his speech improved, the discharge from the ear decreased, and on the first of January, four days later, his speech had returned in a great measure, and he had regained some power over his left side. Two weeks later he was walking about the ward, and out on the porch when the weather would permit, and was discharged from the hospital, February 15, 1890, with slight impairment of hearing on the right side, an occasional hesitancy when speaking, and a somewhat rapid gait.

On September 7 he called at my office, at my request, at which time I again examined both his ear and eyes. His hearing was equally good for either ear; air and bone conduction normal. The ophthalmoscope revealed no pathological changes in the fundus of the eye. In conversation, I noticed an occasional hesitancy; for instance, in describing the place where he fell, he said, "Corner of Tenth and, er, er,—two squares from Market street," whereupon I called the street by name, to which he replied "Yes, Orange." He said that he has no recollection of anything during the first three weeks he was in the hospital, but when his ear "broke and discharged" it came to him "like a flash."

This case is an exceedingly interesting one, not only showing the importance of a careful aural examination in

injuries of this nature, from a therapeutic standpoint, but it presents points of interest to the neurologist as well.

Seguin, in his article on "Localization of Lesions in the of Nervous System," says "Lesions of the speech-center and its associated white fasciculus are indicated by intermittent or constant aphasia of the motor form, with or without paralysis of the face and limbs (on right side usually);" again, in speaking of the indications for trephining, he says: "When aphasia supervenes immediately or within a few days or weeks after an injury of the anterior portion of the head on the left side. It is extremely probable that in the first case a clot or bony spiculum will be found compressing the speech-center; in the second case, that an abscess has formed in or near it (Broca's case)." Edes says, in his article on "Intracranial Hæmorrhage, etc.," in Pepper's System of Medicine, "Aphasia with hemiplegia, often without the slightest disturbance of consciousness, is in a considerable proportion of cases connected with a lesion of the third left frontal convolution, and in a somewhat larger proportion with the frontal lobes in general and the island of Reil;" in another place he says, "Aphasia is almost invariably connected with paralysis of the right side, and will be minutely spoken of hereafter," referring, in all probability, to the preceding quotation.

Now, what are the facts in our case? The right ear alone was involved; there were no contusions of the left side of the head; there *was* a fracture of the petrous portion of the right temporal bone, which, from the symptoms, involved the glenoid fossa, the external auditory canal, and the cavity of the tympanum, but not the middle ear; there was *left* hemiplegia; there was amnesic aphasia, and temporary complete amnesia, the latter symptom extending over a period of three weeks, and return to consciousness followed a discharge of pus from the ear, as did also improvement in speech. What is the deduction? Does it not look very much as if there were bilateral speech-centers?

Case II.—H—— L——, age seventeen, Elk View, Pa., carpenter's apprentice. While at work upon a barn in the country,

the scaffolding gave way, and although in his fall he grasped a portion that remained standing, he was unable to maintain his hold, and he fell a distance of about twenty feet, striking his head on a stone wall. He was picked up and carried to the farm-house, and laid on the porch, in an unconscious condition, bleeding from the nose, mouth, and ears. An "old school" physician was summoned, who pronounced his injuries fatal. The accident happened about midday, May 21, 1890. Word was telephoned to the hospital, and he was received at 10.15 P.M.

When he was admitted he had regained consciousness. There was a contusion of the right auricle, and the tissues covering the masto-occipital region, but no laceration. The tissues in the right orbital region were ecchymosed, and the left lower extremity was bruised and swollen; there was also hæmorrhage from both ears. The contusions of the face and limb were, in all probability, caused by coming in contact with the timbers or the scaffolding during his descent. Temperature, 100°. Pulse, 86. Respiration, 20. He related the circumstances of his fall, and assisted himself from the examination table to his bed. He was given Arnica 30x, compresses wet with arnica and water were applied to the contusions of the head, the limb was ordered rubbed with arnica three times daily, and the auditory canals cleansed once a day.

May 22.—1 A.M. Sleeps most of the time; stupid but not insensible; rouses when spoken to. Diet; milk. Temperature, 100°. Pulse, 86. Respiration, 20.

7 A.M. Temperature, 100°. Pulse 73. Respiration, 15.

9 A.M. Catheterized and drew sixteen ounces.

P.M. Condition remains about the same. Temperature, $98\frac{3}{5}$°. Pulse, 78. Respiration, 18. Treatment continued.

May 23.—Sleeps most of the time but not as stupid.

8 A.M. Temperature, $99\frac{1}{5}$°. Pulse, 56. Respiration, 16.

12 M. Catheterized and drew sixteen ounces. Treatment continued.

4 P.M. Temperature, $99\frac{4}{5}$°. Pulse, 56. Respiration, 16.

9 P.M. Catheterized, drawing sixteen ounces. He moaned a great deal during the early part of the night.

May 24.—8 A.M. Temperature, $99\frac{2}{5}$°. Pulse, 54. Respiration, 17. Drew seventeen ounces of urine.

5 P.M. Catheterized and drew eight ounces.

6 P.M. Complains of right ear aching.

9 P.M. Restless.

10 P.M. Temperature, $99\frac{3}{5}°$. Pulse, 45. Drew four ounces of urine.

12 P.M. Very restless: pain in right ear. The same remedy has been continued, and in addition he has had a drachm of spiritus frumenti hourly since 8 P.M.

May 25.—1 A.M. Pulse, 48; resting quietly.

8 A.M. Temperature, $98\frac{3}{5}°$. Pulse, 50. Respiration, 13. Drew nine ounces of urine. Complains of pain in his head, and back of his right ear.

12 M. Has been awake for half an hour and is much brighter.

1.30 P.M. At the request of the attending physician, I examined his ears. I found a contusion of the right auricle and also one over the right mastoid process; the auditory canal, on the right side, was swollen and infiltrated. I cleaned the canal, removing a considerable quantity of dark-colored blood with a slight admixture of pus, and, on inspection, found a point deep in the canal on the posterior wall from which there was a slight oozing. After cleaning the blood from the left canal, I found a hæmorrhage into the cavity of the tympanum, but was unable to locate the source of hæmorrhage into the canal, there being no break in the tissues. I afterwards discovered a rupture of the membrana flaccida. I suggested that the ears be cleaned at least twice a day. Pulse, 68. The case was a negative one as far as symptoms were concerned. There being only the inclination to sleep, and retention of urine, aside from the slight but continuous hæmorrhage from the ears.

2 P.M. Drew eight ounces of urine.

4 P.M. Temperature, 100°. Pulse, 56. Respiration, 15. During the day he had custard, manioca, whipped cream, and jelly.

6 P.M. He was given some beef tea. Appears brighter.

7 P.M. Pulse, 56 and irregular.

10 P.M. Urinated for the first time since his admission, passing eight ounces. Pulse, 50.

On May 28, the stimulants were stopped. His improvement was steady, and on June 4 he was allowed to go out.

July 7 he reported at my clinic, complaining of ringing in his ears. I examined him and removed a clot of blood from the left canal: air conduction better than bone. I gave him Nux 6x, but

he has not reported since, so I cannot say whether there has been any improvement or not.

This was evidently a case of fracture of the petrous portion of both temporal bones, with concussion of the brain. The abnormally slow pulse points to irritation of the vagus. Arnica was the only remedy administered throughout the case.

THE POTASH SALTS IN THE TREATMENT OF OTITIS.*

BY M. E. GRADY, M.D., BROOKLYN, N. Y.

It is not the aim of this short article to present new suggestions in regard to the application of the drugs in question, but rather to make a brief summary of the extent to which the salts of potash are commonly used, by physicians of varying schools of thought, in the treatment of otitis and the conditions which cause, accompany, and perpetuate it.

It is needless to state that catarrhal otitis is most frequently a secondary trouble, an extension to the tympanum, through the eustachian tube, of a similar condition existing in the mucous membrane lining the nasal passages and pharynx. In the middle ear, the increased secretion, the hypertrophy of the mucous membrane, and, later, the changes in the same, due to contraction and sclerosis, so disturb the delicate relationship of the tympanic membrane, ossicles, and labyrinth, that the conduction of sound waves is more or less interfered with and the acuteness of hearing impaired.

Consequently, to treat the secondary trouble with any degree of success, attention must be directed to the primary condition, and an effort made to relieve the rhinitis and pharyngitis, as well as combat the constitutional dyscrasia, if there be such, to which these local manifestations are due.

Toward the accomplishment of these ends the potash salts offer considerable assistance. They play an important

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rôle both as internal and local medicaments. In the former capacity they act principally as absorbents, alteratives, and sedatives; in the latter as antiseptics, astringents, detergents, escharotics, and stimulants.

Potassii bicarbonas ($K\ H\ CO_3$).—The bicarbonate, in the form of an aqueous solution, may be employed, like the bicarbonate of soda, as spray or douche to nares and pharynx; its action is that of a detergent.

Potassii bichromas ($K_2\ Cr_2\ O_7$).—Kali bichromicum is frequently prescribed in acute and chronic catarrhal otitis, associated with catarrhal inflammation of the upper air passages, accompanied by the tough, tenacious, glutinous secretion characteristic of the drug; it is also employed in chronic suppurative otitis with excoriating otorrhœa.

The bichromate of potash is a valuable local remedy. In the form of a weak aqueous solution—

℞ Potassii bichromatis..... gr. jv
Aquæ..... fl. ℥ j
M. Sig. Spray.

its action is astringent, and may be used in rhinitis and pharyngitis. A saturated solution

℞ Potassii bichromatis..... gr. L
Aquæ..... fl. ℥ j
M. Sig. Apply locally every second day, five or six times.

is escharotic or caustic in its action; it may be applied to granulations occurring in the tympanum, or naso-pharyngeal mucous membrane.

Potassii bromidum (K Br).—The bromide has been proposed for the relief of tinnitus aurium, which, in some cases of otitis media catarrhalis chronica, is more distressing to the patient than the loss of hearing. Of the efficacy of the drug in this respect we can make no definite statement, having but recently employed it for this purpose (in doses of gr. xx–xxx per diem), and, as yet, unable to decide whether the relief, reported during its use, be a coincidence or a consequence.

It is reasonable to suppose such a relief possible, as tinnitus is due to a disturbance of the circulation in the ear, and

the physiological action of the bromide is to depress the heart's action, not only reducing the number of the cardiac pulsations, but diminishing their force, and lowering the tension of the arterial system.

Moreover, tinnitus aurium has been complained of by persons taking a considerable quantity of the bromide (ʒ j–jss. per diem), although, in these cases also, the production of the symptom might not be the result of the drug's action, nor an argument in favor of its employment for the relief of tinnitus according to the law of *similia.*

Potassii carbonas (K_2CO_3).—Kali carbonicum, which was proved by Hahnemann, and is also one of Schüssler's "tissue remedies," is employed in treating chronic catarrhal and suppurative otitis, and accompanying naso-pharyngeal catarrh.

Potassii Chloras ($K\ ClO_3$).—The chlorate of potash is useful internally and locally in the treatment of otitis, and associated affections of the nose, mouth, and throat. It is used as a spray or gargle in varying strength, from—

℞ Potassii chloratis..... gr. iij–v
Aquæ... .... fl ℥ j
M. Sig. Spray or gargle.

to the saturated solution:

℞ Potassii chloratis..... ..... gr. xxx
Aquæ..... fl ℥ j
M.

Its local action is detergent and astringent.

It is frequently used locally in combination with other drugs:

℞ Potassii chloratis..... ..... ʒ j
Acid carbolic .... ʒ ss
Glycerinæ..... ℥ j
Aquæ ... . ℥ iij
M. Sig. Spray or gargle.

℞ Potassii chloratis..... ..... ℥ ij
Ext. fl. rheos. glabri, glycerinæ..... ..... aa fl ℥ j.
Aquæ .... fl. ℥ vj
M. Sig. Gargle.

Potassii chloridum (K Cl).—Kali muriaticum is another of

Schüssler's "tissue remedies," and is employed internally in catarrhal and suppurative otitis.

Potassii iodidum (K I).—The iodide of potash is extensively used internally and locally in the treatment of otitis. Internally it is useful as an alterative in cases where a syphilitic dyscrasia is discovered or suspected to be the cause of the difficulty. Locally it is used alone—

℞ Potassii iodidi..... gr. j–v
Aquæ..... fl ℥ j
M. Sig. Spray.

or, more commonly, in combination with other agents as—

℞ Potassii iodidi..... gr xxx
Iodinii (cryst.)..... gr. v
Glycerinæ..... fl ℥ jv
M. Sig. Apply with camel's hair brush.

℞ Potassii iodidi..... gr. xxv
Tinct. iodinii..... fl ʒ jv
Aquæ..... fl. ℥ j
M. Sig. Spray.

℞ Potassii iodidi..... gr. x
Iodinii (cryst.)..... gr. jv
Zinci sulpho-carbol } aa..... ℈ j
Zinci iodidi }
Listerine..... fl ℥ j
Aquæ..... fl ℥ iij
M. Sig. Spray.

Potassii nitras (K No_3).—The nitrate of potash (salt-petre) is sometimes an ingredient of gargles.

Potassii Permanganas (K_2 Mn_2 O_8).—The permanganate of potash has an important action as a detergent, antiseptic and astringent, when applied locally in suppurative otitis with offensive otorrhœa, and naso-pharyngeal inflammations with muco-purulent discharge (ozæna). It is used in varying strength.

℞ Potassii permanganatis..... gr. j—xxx
Aquæ..... fl ℥ j
M. Sig. Spray.

(Saturated Solution.)

℞ Potassii permanganatis..... gr. xxx
Aquæ..... fl. ℥ j
M. Sig. 10–20 gtt to 1 pint of water, for nasal douche.

Condy's disinfecting liquid or *fluid*, which is a concentrated solution of the permanganate of potash, may be employed. *Darby's fluid*, a similar preparation, may also be used.

Potassii phosphates (K_2 HPo_4).—Kali phosphoricum, one of the "tissue remedies," is prescribed in chronic suppurative otitis.

Potassii Sulphas (K_2So_4).—Kali sulphuricum is also a "tissue remedy" which is employed in chronic suppurative otitis; a bright yellow, somewhat offensive otorrhœa has been suggested as an indication for its use.

HEADACHE OF TEN YEARS STANDING, TOGETHER WITH HYPEROPIA, ASTIGMATISM AND ESOPHORIA; A CURE.*

BY E. ELMER KEELER, M.D., SYRACUSE, N. Y.

The only apology offered for presenting the following simple case is contained in the patient's words when first seen: "I have been under the treatment of eight different oculists without a particle of benefit, and I come to you only at the earnest solicitation of my physician, Dr. E. O. Kinne."

Naturally my most careful attention was given to the case, especially as she mentioned the names of several of the best known oculists of the United States, and at least two of Europe. These had all examined her eyes, detected trouble, and given glasses which invariably she had been unable to wear.

The patient, Mrs. M——, aged thirty-five, came under my care last fall. Is a brisk, energetic woman, and formerly was a great reader. For the past ten years has had intense headaches nearly every day. Could not read a letter requiring ten minutes' use of the eyes, as they would tire so quickly. Intense supraorbital pain, soreness of eyeballs to touch, and agglutination of the lids in the morning, were other troublesome symptoms. The patient, although of naturally a hopeful disposition, was afraid she would become blind. An ophthalmoscopic examination revealed nothing abnormal. V. O. D.$=\frac{20}{20}$; V. O. S.$=\frac{20}{30}$, not improved by + or — glasses. Had been last given by an oculist of our city a +.75 D. for both eyes.

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* Read before the American Institute of Homœopathy, June, 1890.

I found that +.50 D. cyl. axis 90° gave fairly good vision for both eyes. Suspecting muscular insufficiency, I tested and found esophoria O. D. 6°, O. S. 7°; abduction 3°. Atropine was now used, revealing a hidden hyperopia, the vision being now O. D. $\frac{20}{40}$, O. S. $\frac{20}{50}$. With +.75 D.⌒+.75 D. cyl. ax. 90° for right and + 1. D.+⌒.75 D. cyl. ax. 90° for left eye, vision became $\frac{20}{20}$ for each eye.

I now began to systematically exercise the eyes with the proper prisms, and the external recti soon commenced to strengthen. At this time, the patient being about to leave the city for a protracted visit, I ordered a pair of prisms 4° base in to be used three times a day, a few moments at a time.

She was not seen from this time until April 10, when she came into my office with the surprising news that she could use her eyes for any length of time without the slightest discomfort, and did not think she needed any other glasses at all.

I found, however, that correcting the astigmatism greatly improved the clearness of vision, and a + .75 D. cyl. ax. 90° was ordered for each eye, this being preferred instead of the compound lenses. The esophoria had entirely disappeared while the patient was wearing the prisms, and with that the asthenopia and headaches.

In certain cases correcting the astigmatism and other refractive errors have been found to remove the muscular anomalies, but will the reverse prove true in so far as subjective symptoms are concerned?

In this case, so far as I could learn, no attempt had hitherto been made to either correct the astigmatism or measure the comparative strength of the different ocular muscles.

AN ANALYSIS OF 1022 EYES EXAMINED UNDER ATROPINE.*

BY GEO. S. NORTON, M.D.

Hardly a journal has yet been published in which articles have not, from time to time appeared, relative to the use of atropine in the detection of errors of refraction. The advantages and disadvantages of its use have been most strongly put before the profession by able writers; some enthusiastically recommending its employment in nearly all cases of ametropia, while others have just as forcibly condemned its use in all cases. An examination of these articles, however, fails to convince the reader as to whether atropine should be employed or not in the determination of refractive troubles, for the simple reason that they are, almost without exception, only the opinions of the writers, and are not based upon facts. Hoping to throw some light upon this subject from a practical standpoint, and gather information for my own benefit, my assistant, Dr. Geo. A. Shepard, has, during the past summer, tabulated for me all cases occurring in my private practice for five years, between January 1, 1885, and January 1, 1890, in which atropine was employed to ascertain the amount of ametropia. This comprises nearly 600 cases, or 1022 eyes.

As it would be undesirable to publish this mass of material in detail, we have endeavored to condense the most valuable portion in the tables herewith presented. It may seem from this number of cases that I am an enthusi-

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* Read before the Hom. Med. Soc. of the State of N. Y., Oct. 1, 1890.

astic advocate of atropine at all times, but this is not true, for during this same period some 3000 cases of ametropia were tested in my office; therefore only about one-fifth were examined under atropine. The class of cases which indicated the mydriatic will become apparent as we proceed. A large per cent. of the cases noted in these tables were tested both by my assistant and myself, and I believe that all the examinations were made with a fair degree of accuracy, though some few may have been hurried over when first seen. As 1000 eyes ought to be sufficient from which to draw some definite conclusions, I have not attempted to utilize a large number of cases occurring before 1885, and since January 1, 1890, in my private practice. Neither have I included the great number of cases occurring in my clinic at the New York Ophthalmic Hospital, for it would give such an immense amount of material that an analysis would be difficult and would, I believe, only confirm the conclusions herewith drawn.

An explanation of the following tables first becomes necessary. In the first nine tables are considered successively emmetropia and the various forms of ametropia as determined at the first examination. Taking Table I. as an example, we find the heading "Emmetropia, 68 Eyes," the number of eyes in which atropine was used. Under the first sub-heading, "Under Atropine," will be found the form of the refractive error and the number of eyes in each, as determined when the patient was under the influence of the mydriatic. The next division gives the "Amount of latent Ametropia," as represented by a glass that corrects the difference in the refraction before and after atropine; sph. indicating the spherical and cyl. the cylindrical lens. The figures under 0 show the number of eyes in which there was no change, spherical, or cylindrical, or both, while —.50 D. indicates the number of eyes in which the variation was .50 D. or less, —1. D. the number between .50 D. and 1. D., —2. D. between 1. D. and 2. D., +2. D. those over 2. D. It must be understood that the latent ametropia, as a rule, indicates in H. that the hyperopia is of a *higher* degree

under atropine, while in M. the myopia is of a *lower* degree. In astigmatism the degree is sometimes increased and sometimes diminished under atropine. To indicate this, a horizontal division of the spaces in Tables II., V., and VI. has been made, the figures above the line indicating the increase and those below the decrease. This was not necessary in Tables I., III., VII., VIII., and IX. It ought to have been done in Table IV., but as it was not, at first, have not considered it necessary to go through the whole work a second time, as very little benefit would be derived from so doing and the labor would be great. The third division gives the number and kind of glasses prescribed for each anomaly, whether spherical, cylindrical, sphero-cylindrical, or bi-cylindrical. The fourth and last division varies in the different tables. In Tables I., III., V., and VII., the amount of the *latent* ametropia neutralized by glasses is given; there being columns which indicate whether none of this was corrected, or 25 per cent., 50 per cent., 75 per cent., or 100 per cent. In Tables II., IV., and VI., the latent ametropia, representing almost invariably a diminution in the degree, would, of course, not be corrected by lenses; therefore, the percentage of the whole amount of ametropia as determined under atropine is given. It was also thought best to carry out the same plan in Tables VIII. and IX. Table X. requires no explanation, as the headings sufficiently show its purpose.

Table I.

EMMETROPIA (EM.), 68 EYES.

Under Atrop.		Amount Latent Ametropia.										Glass Prescribed				Amt. Latent Ametrop. Neutralized.									
Refraction.	No. Eyes.	0		−.50 D.		−1 D.		−2 D.		+2 D.		Sph	Cyl	Sp-cy	Bi-cy	0		25%		50%		75%		100%	
		Sph	Cyl	Sph	Cyl	Sph	Cyl	Sph	Cyl	Sph	Cyl					Sph	Cyl	Sph	Cyl	Sph	Cyl	Sph	Cyl	Sph	Cyl
Em.	7	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
M.	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
H.	26	..	..	11	..	8	..	7	..	..	..	15	..	..	..	11	..	1	..	5	..	4	..	5	..
Am.	...	..	..	..	..	..	..	..	..	..	..	.	..	..	..	..	..	..	..	..	..	..	..	..	..
Ah.	7	..	..	..	7	..	..	..	..	..	..	..	7	..	..	..	..	..	..	..	..	..	.	..	7
M.+Am.	....	..	..	..	..	..	..	..	..	..	..	.	..	..	..	..	..	..	..	..	..	..	..	..	..
H.+Ah.	28	..	..	7	22	16	5	5	..	1	..	3	13	10	..	15	4	2	..	1	..	6	3	4	21
Amh.	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ahm.	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.	..	..	..

Table II.

MYOPIA (M.), 77 EYES.

Under Atrop.		Amount Latent Ametropia.										Glass Prescribed				Amount Ametrop. Neutralized.									
Refraction.	No. Eyes.	0		−.50 D.		−1 D.		−2 D.		+2 D.		Sph	Cyl	Sp-cy	Bi-cy	0		25%		50%		75%		100%	
		Sph	Cyl	Sph	Cyl	Sph	Cyl	Sph	Cyl	Sph	Cyl					Sph	Cyl	Sph	Cyl	Sph	Cyl	Sph	Cyl	Sph	Cyl
Em.	1	..	..	1	..	..	..	..	..	..	.	..	..	..	..	..	..	..	..	..	..	..	..	..	..
M.	32	14	..	.. 13	..	.. 4	..	..	..	.. 1	..	23	..	..	..	9	..	5	..	5	..	9	..	4	..
H.	5	..	..	..	..	.. 1	..	.. 3	..	.. 1	..	5	..	..	..	..	..	..	..	..	..	1	..	4	..
Am.	10	..	..	.. 6	7 ..	.. 2	1 ..	.. 1	1 ..	.. 1	1 ..	..	6	..	..	..	4	..	..	..	..	..	1	..	5
Ah.	2	..	.	.. 1	2 ..	.. 1	..	..	..	..	..	..	2	..	..	..	..	.	..	..	1	.	..	..	1
M.+Am.	20	6	..	.. 6	11 ..	2 6	5 ..	..	2 ..	..	2 ..	7	5	4	..	7	8	1	..	3	2	4	1	5	9
H.+Ah.	6	..	..	.. 1	4 ..	.. 1	..	.. 1	2 ..	.. 3	..	1	5	..	..	4	1	..	..	1	..	1	2	..	3
Amh.	1	..	..	..	.. 1	.. 1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..
Ahm.	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

Table III.

HYPEROPIA (H.), 177 EYES.

Under Atrop.		Amount Latent Ametropia.										Glass Prescribed				Amt. Latent Ametrop. Neutralized.									
Refraction.	No. Eyes.	0		−.50 D.		−1 D.		−2 D.		+2 D.		Sph	Cyl	Sp-cy	Bi-cy	0		25%		50%		75%		100%	
		Sph	Cyl	Sph	Cyl	Sph	Cyl	Sph	Cyl	Sph	Cyl					Sph	Cyl	Sph	Cyl	Sph	Cyl	Sph	Cyl	Sph	Cyl
Em.	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
M.	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.	..	..	..	..	..	..	..
H.	86	10	..	48	..	13	..	11	..	4	..	82	..	..	..	44	..	30	..	4	..	2	..	5	..
Am.	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ah.	13	..	..	..	11	..	2	..	..	..	..	1	11	..	..	..	1	..	..	..	2	..	1	..	9
M.+Am.	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
H.+Ah.	78	15	..	32	62	9	13	10	1	12	2	23	16	35	..	51	26	14	..	7	3	2	3	4	40
Amh.	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.
Ahm.	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.	..	..	..

Table IV.

SIMPLE MYOPIC ASTIGMATISM (AM.), 153 EYES.

Under Atrop.		Amount Latent Ametropia.										Glass Prescribed				Amount Ametrop. Neutralized.									
Refraction.	No. Eyes.	0		−.50 D.		−1 D.		−2 D.		+2 D.		− Sph	− Cyl	− Sp-cy	− Bi-cy	0		25%		50%		75%		100%	
		− Sph	− Cyl	− Sph	− Cyl	− Sph	− Cyl	− Sph	− Cyl	− Sph	− Cyl					− Sph	− Cyl	− Sph	− Cyl	− Sph	− Cyl	− Sph	− Cyl	− Sph	− Cyl
Em.	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
M.	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.	..	..	..	..	..	..	..
H.	8	..	..	1	7	4	1	2	..	1	..	8	..	..	..	..	..	..	..	1	..	3	..	4	..
Am.	32	..	14	..	18	.	..	..	..	..	..	..	29	..	..	..	3	..	..	..	3	..	6	..	20
Ah.	37	..	..	15	16	16	3	2	..	4	1	36	..	..	..	..	..	..	1	..	1	..	12	..	22
M.+Am.	1	..	..	1	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	1
H.+Ah.	32	..	..	8	14	10	5	9	..	5	..	6	14	9	..	21	9	1	..	6	1	2	3	2	19
Amh.	23	..	..	15	9	2	4	..	..	..	1	..	10	3	8	..	2	..	..	..	4	1	11	2	6
Ahm.	20	..	..	8	6	3	5	5	3	1	..	..	7	..	12	..	1	..	..	..	3	..	10	..	6

Table V.

SIMPLE HYPEROPIC ASTIGMATISM (AH.), 252 EYES.

Under Atrop.		Amount Latent Ametropia.										Glass Prescribed				Amount Latent Ametrop. Neutralized.									
Refraction.	No. Eyes.	0		−.50 D.		−1 D.		−2 D.		+2 D.		− Sph	− Cyl	− Sp-cy	− Bi-cy	0		25%		50%		75%		100%	
		− Sph	− Cyl	− Sph	− Cyl	− Sph	− Cyl	− Sph	− Cyl	− Sph	− Cyl					− Sph	− Cyl	− Sph	− Cyl	− Sph	− Cyl	− Sph	− Cyl	− Sph	− Cyl
Em.	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
M.	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
H.	22	..	..	3	..	9	.	8	..	2	..	18	..	..	..	4	..	2	..	10	..	3	..	3	..
				..	22	..	..	..		..															
Am.	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ah.	51	..	18	..	30	..	2	..	..	..	1	..	49	..	..	..	25	.	..	..	4	..	5	..	17
					..		..				..														
M.+Am.	....	.	..	..	.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
H.+Ah.	173	..	72	66	62	56	9	23	..	25	..	20	81	57	..	88	118	10	3	32	10	23	4	20	38
				..	29	3	..	..	1	..															
Amh.	2	..	..	..	..	..	..	..	..	..	2	..	2	..	..	..	..	..	..	..	..	..	2	..	..
											..														
Ahm.	4	..	..	..	2	..	2	..	..	..	..	..	4	..	..	..	2	..	1	..	1	..	..	..	..
					..		..																		

Table VI.

COMPOUND MYOPIC ASTIGMATISM (M.+AM.), 176 EYES.

Under Atrop.		Amount Latent Ametropia.										Glass Prescribed				Amount Ametrop. Neutralized.									
Refraction.	No. Eyes.	0		−.50 D.		−1 D.		−2 D.		+2 D.		−Sph	−Cyl	−Sp-cy	−Bi-cy	0		25%		50%		75%		100%	
		−Sph	−Cyl	−Sph	−Cyl	−Sph	−Cyl	−Sph	−Cyl	−Sph	−Cyl					−Sph	−Cyl	−Sph	−Cyl	−Sph	−Cyl	−Sph	−Cyl	−Sph	−Cyl
Em.	....	..	..	..	..	..	..	..	..	..	.	..	..	..	..	..	..	..	..	..	..	..	..	..	..
M.	13	4	..	1 4	.. 8	1 2	.. 3	.. 1	.. 1	..	..	9	..	..	..	4	..	3	..	2	..	2	..	2	..
H.	3	..	..	..	.. 2	..	.. 1	.. 2	..	.. 1	..	2	..	..	..	1	..	..	..	1	..	1	..	..	..
Am.	22	..	11	.. 14	7 1	.. 6	2 ..	.. 1	1 ..	.. 1	..	..	19	1	..	..	3	..	..	..	1	..	7	..	11
Ah.	3	..	2	.. 1	..	.. 1	1 ..	.. 1	..	..	..	..	3	..	..	..	..	.	..	..	..	..	..	..	3
M.+Am.	128	48	59	5 51	32 30	5 15	2 4	1 ..	1 ..	.. 4	..	20	29	69	..	39	26	7	..	20	2	47	30	15	70
H.+Ah.	3	..	1	..	2 ..	..	..	.. 2	..	.. 1	..	..	1	2	..	1	..	..	..	2	..	..	1	..	2
Amh.	4	..	1	..	1 ..	.. 2	1 ..	..	..	.. 2	1 ..	..	4	..	..	..	..	..	..	..	3	..	1	..	..
Ahm.	....	..	..	..	.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..

Table VII.

COMPOUND HYPEROPIC ASTIGMATISM (H.+AH.), 79 EYES.

Under Atrop.		Amount Latent Ametropia.										Glass Prescribed				Amt. Latent Ametrop. Neutralized.									
Refraction.	No. Eyes.	0		−.50 D.		−1 D.		−2 D.		+2 D.		−Sph	−Cyl	−Sp-cy	−Bi-cy	0		25%		50%		75%		100%	
		−Sph	−Cyl	−Sph	−Cyl	−Sph	−Cyl	−Sph	−Cyl	−Sph	−Cyl					−Sph	−Cyl	−Sph	−Cyl	−Sph	−Cyl	−Sph	−Cyl	−Sph	−Cyl
Em.	....	..	..	.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
M.	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.	..	..	..	..	..	..	..
H	14	..	..	10	9	..	5	1	..	3	..	13	..	..	..	..	..	3	..	7	..	1	..	3	..
Am.	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ah	4	4	1	..	1	..	..	..	2	.	..	..	4	..	..	..	1	..	..	..	2	..	..	..	1
M.+Am.	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
H.+Ah.	61	14	37	18	18	6	2	13	2	10	..	10	8	39	..	29	41	11	..	8	2	7	2	4	10
Amh.	....	.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ahm.	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.	..	..	..

Table VIII.

MIXED ASTIGMATISM, PREDOMINANT MYOPIA (AMH.), 16 EYES.

Under Atrop.		Amount Latent Ametropia.										Glass Prescribed				Amount Ametrop. Neutralized.									
Refraction.	No. Eyes.	0		−.50 D.		−1 D.		−2 D.		+2 D.		Sph	Cyl	Sp-cy	Bi-cy	0		25%		50%		75%		100%	
		Sph	Cyl	Sph	Cyl	Sph	Cyl	Sph	Cyl	Sph	Cyl					Sph	Cyl	Sph	Cyl	Sph	Cyl	Sph	Cyl	Sph	Cyl
Em.	....	..	..	.	..	..	..	..	..	..	.	..	..	..	..	..	..	..	..	..	..	..	..	..	..
M	....	..	..	.	..	..	..	..	..	.	..	..	..	..	..	..	..	.	..	..	..	..	..	..	..
H	....	..	..	..	..	..	..	..	.	.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Am.	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ah	1	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	1	..	..	..	..
M.+Am.	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
H.+Ah	2	..	..	..	..	1	1	..	1	1	..	..	1	1	..	1	..	..	..	1	..	..	2	..	..
Amh	7	..	1	2	6	..	..	..	..	..	..	..	..	..	7	..	..	..	..	..	2	..	3	..	2
Ahm	6	..	..	1	3	1	1	..	2	..	..	..	1	..	5	..	1	..	..	..	2	.	2	..	1

Table IX.

MIXED ASTIGMATISM, PREDOMINANT HYPEROPIA (AHM.), 24 EYES.

Under Atrop.		Amount Latent Ametropia.										Glass Prescribed				Amount Ametrop. Neutralized.									
Refraction.	No. Eyes.	0		−.50 D.		−1 D.		−2 D.		+2 D.		Sph	Cyl	Sp-cy	Bi-cy	0		25%		50%		75%		100%	
		Sph	Cyl	Sph	Cyl	Sph	Cyl	Sph	Cyl	Sph	Cyl					Sph	Cyl	Sph	Cyl	Sph	Cyl	Sph	Cyl	Sph	Cyl
Em.	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
M	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	.	..	..	..	..	..	..	..
H.	1	..	..	..	1	1	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..
Am.	2	..	..	..	..	..	..	2	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	2
Ah	5	1	..	1	1	2	..	1	..	..	..	..	5	..	..	..	..	..	..	..	1	1	..	..	3
M.+Am.	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
H.+Ah	7	..	..	..	1	3	5	3	..	1	..	..	5	2	..	5	1	..	2	1	..	..	..	1	4
Amh	....	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ahm	9	..	..	1	6	1	3	..	..	..	..	..	1	..	8	..	..	..	..	..	2	..	4	..	3

TABLE X.

Refraction.	No. Eyes.	Age.					Time Glass Prescribed after Atropine.				Glass not Prescribed.	Symptoms of which Patient Complained.						
		—10	10-20	20-30	30-40	+40	7 days.	7-14 d.	14-21 d.	+21 d.		E.	H.	F. H.	O. H.	N.	E. & H.	E-H-N.
Em	15	.	9	2	3	1	4	8	....	1	2	3	...	...	...	...	8	4
	53	....	28	14	11	....	5	29	5	3	11	8	4	3	...	...	27	11
M.	26	2	8	13	2	1	1	16	....	2	7	12	1	1	2	...	5	5
	51	....	19	25	6	1	5	26	5	4	11	16	1	...	2	...	20	12
H.	45	7	19	8	5	6	9	24	5	2	2	23	...	...	...	2	15	4
	132	11	64	41	11	4	19	68	19	19	7	25	6	3	...	...	80	18
Am	44	3	9	14	14	4	2	31	8	1	2	15	2	...	1	...	18	8
	109	....	25	39	32	13	6	73	12	10	8	29	4	3	...	...	53	20
Ah.	83	1	25	13	31	13	2	66	5	4	6	35	2	2	..	...	33	11
	169	5	41	53	53	17	8	116	14	16	15	41	10	4	3	...	84	27
M.+Am.	48	....	13	16	17	2	1	30	5	6	6	25	3	1	...	...	14	5
	128	....	38	45	36	9	4	86	11	16	11	35	3	2	4	2	64	18
H.+Ah.	24	...	4	14	3	3	1	17	2	2	2	8	2	...	...	2	8	4
	55	2	19	10	15	9	6	35	3	8	3	11	2	...	...	...	31	11
Amh.	2	....	1	....	1	....	....	2	...	....	....	1	...	...	...	...	...	1
	14	....	4	1	7	2	....	6	4	4	....	1	...	...	...	...	6	7
Ahm.	10	....	2	2	4	2	1	9	....	....	....	4	...	...	...	...	3	3
	14	....	4	3	3	4	1	10	....	3	....	1	...	...	...	...	9	4

EMMETROPIA.

By reference to Table I., it will be seen that there were 68 eyes which were apparently Em., and yet the eye, head, and nervous symptoms were so prominent, seemingly referable to refractive error, that an examination under atropine was considered necessary. Of this number, 53 were in women and 15 in men; and in all but 11, headache or nervous symptoms, or both, were complained of in connection with the eye symptoms or independent of them. The ages of the patients were chiefly between 10 and 30 years, proportionally a little older in women than in men. Of these 68 eyes, which were apparently Em., only 7 were found to be really so when examined with accommodation paralyzed. Of the remaining 61, H. was discovered in 26, Ah. in 7, and H.+Ah. in 28. Thus in 54 there was present more or less H., often of a high degree, 13 being over 1. D. and 24 more over .50 D. But it seems that not only was hyperopia concealed, but also astigmatism, for in 34 eyes As. was found, either alone or in connection with H.; the amount of As.

being less than .50 D. in 29, while in the remaining 5 it was less than 1. D. In 48 of the 61 eyes, glasses were required and so prescribed; glasses which could not have been given with any degree of accuracy, if given at all, without first determining the true error of refraction. Eighteen of these prescriptions were for spherical lenses, 20 for cylindrical, and 10 for sphero-cylindrical, thus showing what an important factor is latent As. in producing asthenopic symptoms and nervous disturbances. Turning now to the amount of latent H. corrected, it will be seen that from 50 to 100 per cent. was neutralized in a little more than one-half of the cases, while the latent As. was wholly neutralized in all 7 eyes with Ah., and in 21 of the 28 with H.+Ah. My experience has proven beyond any question that small degrees of As. may produce marked eye, head, and nervous symptoms, and that these disturbances can only be relieved by correcting the As. with proper lenses. In all cases, whenever practicable, glasses were not prescribed until the patient had fully recovered from the atropine. This usually took place about the seventh or eighth day. By reference to Table X., it will be seen to have been less than 14 days in 46 of the 55 cases, in which glasses were given, and in some if not all of the remaining 9, the cause of the delay was not due to the non-recovery from the mydriatic.

MYOPIA.

Examination of Table II., reveals 77 eyes, which were apparently myopic, but under atropine only 32 were found to be uncomplicated cases of myopia, and only 14 of these had a myopia of as high a degree as before the accommodation was paralyzed. In 20 more there was M. + Am., thus making 52 in which M. was really present. In the remaining 25 no M. was present, but Em. in 1, H. in 5, Am. in 10, Ah. in 2, H. + Ah. in 6, and Amh. in 1. Let us consider these different errors of refraction. The one case of Em. simulated M. on account of a slight spasm of the accommodation of less than .50 D. That M. is not always associated with spasm of the ciliary muscle, especially of a

high degree, is evident in the 32 eyes with M., in which there was no decrease in 14, and in 13 more a decrease of .50 D. or less, while in only 5 did it exceed .50 D. An interesting contrast is here observed in the eyes, in which there was H. and H. + Ah., for all 5 eyes with H. and 5 of the 6 with H. + Ah. showed a latent ametropia of 1. D. or more, thus indicating that high degrees of spasm of the accommodation are much more frequent in H. than in M. This statement is also confirmed by a comparison of Tables II. and III. Of the 77 eyes, it will be seen that there was a latent As. in 39, although in 27 of these it was less than .50 D.; thus indicating that a certain amount of As. is frequently concealed in apparently simple M., but I doubt if it is as frequently the case as shown in this table, for in all probability some of these cases, especially of low degree, were overlooked in the first examination. For the 77 eyes, spherical glasses were prescribed in 36, cylinders in 19, and sphero-cylinders in 4, while in 18 no glasses were considered advisable. Turning to the amount of ametropia neutralized, we note that in only 13 was the whole amount of M. corrected, while in 23 others 50 per cent. or more was neutralized by appropriate lenses, leaving 17 cases of M. or H., in which less than 25 per cent. was corrected. The As., however, present in 39 eyes, was wholly neutralized in 18, while in 8 more 50 per cent. or more was corrected. More eyes in women than in men were examined under atropine, 51 of the former and 26 of the latter. Of these, 67 were under 30 years of age, more between 20 and 30 than during any other decade. Of the symptoms complained of by the patients, the eye, head, and nervous symptoms were proportionately more frequent in women than in men, while the eye symptoms alone were seen to predominate in men. Glasses were, as a rule, prescribed within two weeks after the instillation of atropine, in only 11 instances over two weeks, being usually given between the seventh and tenth days, when the accommodation had regained its power.

HYPEROPIA.

In Table III. we find the record of 177 eyes, in which only

H. was detected upon first examination. After paralyzing the accomodation 86, or nearly 50 per cent., still showed simple H. but only 10 of them presented the same degree of H. both with and without atropine, thus in 167 latent ametropia was evidenced. But in 48 of these 86 eyes the concealed H. was .50 D. or less, while in 28 the Hl. was from .50 D. upwards. Of the remaining 91 eyes, Ah. was noted in 13, and H.+Ah. in 78, thus revealing the frequent occurrence of As. in apparently simple cases of H. The As., however, was usually of a low degree, being .50 D. or less in 71 eyes. Spherical glasses were prescribed in 82 of the 86 cases of H., neutralizing none of the Hl. in 44, 25 per cent. in 30, 100 per cent. in 5, and from 50 to 100 per cent. in 6. Simple cylinders were given in 12 of the 13 eyes with Ah. correcting 100 per cent. in 9. For the 78 eyes with H.+Ah. the prescription for glasses varied greatly according to the case, age, nature of work, etc.; 23 sphericals 16 cylinders, and 35 sphero-cylinders having been given. The endeavor was usually made to correct as much of the As. as possible; thus we observe in H.+Ah. that 100 per cent. of the As. was neutralized in 40 instances, while 100 per cent. of the H. was only corrected in 4. Of the 177 eyes, 132 were in women and 45 in men. The age of the patients was between 10 and 20 years in nearly 50 per cent., the next most frequent decade being between 20 and 30. More hyperopes under 10 were examined than in any other anomaly of refraction, but this would be expected from the relative frequency of H. in children under 10. Head or nervous symptoms, or both, in connection with the eye symptoms were more commonly observed in women, while the relatively greater frequency of eye symptoms alone was especially noticeable in men. The length of time after the employment of atropine until glasses were prescribed, was between 7 and 14 days in 90 eyes, less than 7 days in 28, and over 14 days in 45.

SIMPLE MYOPIC ASTIGMATISM.

In the series of cases under consideration 153 eyes presented with simple myopic astigmatism, which under atro-

pine proved to be H. in 8, Am. in 32, Ah. in 37, M.+Am. in 1, H.+Ah. in 32, Amh. in 23 and Ahm. in 20. Therefore in 8 eyes there was an apparent As., 7 of less than .50 D. and 1 less than 1. D., which really were hyperopic. The remaining 145 eyes retained more or less of the As. apparent in first test. Uncomplicated Am. was found in only 32 eyes, while in but 14 of these did the test, after paralyzing the accommodation, correspond with the first examination. The remaining 18 eyes, however, deviated but .50 D. or less. Of Ah. there were 37 eyes, all of which were concealed by a regular spasm of the accommodation in all meridians, while in 20 of this number there was also a change in the amount of As., 16 being of .50 D. or less. Of M.+Am. there was one case, and as the M. was less than 1. D. it was probably overlooked in first examination, as its presence cannot be satisfactorily explained otherwise. A concealed H.+Ah. was detected in 32 eyes and in 14 of these the Hl. exceeded 1. D., 5 of which were over 2. D., thus presenting a high degree of spasm in all meridians. In 19, a variation was also noted in the As., though of a low degree. In 43 eyes, the simple As. proved to be mixed with predominant M. in 23, and predominant H. in 20. In 27 of the 43 eyes the degree of As. was changed in addition to spherical deviation. Glasses were prescribed in 143 cases, spherical in 14, cylindrical in 96, sphero-cylindrical in 13, and bi-cylindrical in 20. In how many of these eyes with apparent Am. would it have been possible to have prescribed proper glasses without first determining the character and degree of ametropia? A study of the columns of amount of ametropia neutralized, shows that in 76, or more than 50 per cent. of all the astigmatic eyes, the whole amount of As. was neutralized, and in 42 others 75 per cent. was corrected. The latent hyperopia in H.+Ah. was not as a rule neutralized, but over 75 per cent of the Hl. in H. was corrected in 7 of the 8 eyes. The number of eyes examined in women was as usual more than in men, 109 to 44. The ages of the patients were greater in Am. than in the preceding errors of refraction, being more common over 20

years. Head or nervous symptoms or both in connection with the eye symptoms were more commonly experienced in this, as well as in all the other forms of refractive error, especially in women. The glasses were, as a rule, prescribed in from one to two weeks after the employment of the mydriatic.

SIMPLE HYPEROPIC ASTIGMATISM.

The largest number of eyes in all the various anomalies of refraction in which an examination under atropine was considered advisable, were found in simple hyperopic astigmatism, of which there were 252. The true error of refraction proved to be H. in 22, Ah. in 51, H. + Ah. in 173, Amh. in 2, and Ahm. in 4. In a certain number of eyes (22), as in Am., the As. was found to be only apparent; the real refractive error being H. The high degree of Hl. is quite noticeable in these eyes, 19 being over .50 D. Fifty-one of the 252 eyes presented no change in the refractive error, remaining Ah., although only eighteen of these gave the same degree of As.; nearly all the others varying only .50 D. or less. The refraction of a great portion of the eyes (173) was found to be H + Ah.; the concealed H. in 122 being of 1. D. or less, while in 25 it was over 2. D. The As. did not vary in 72 eyes, while in 91 the variation was .50 D. or less. The degree of As. sometimes increased and sometimes diminished, 72 of the former and 30 of the latter. In six eyes the As. was mixed; 2, in which the M. predominated, and 4 the H. Glasses were prescribed in 231 cases, 38 spherical, 136 cylindrical, and 57 sphero-cylindrical. Therefore, in less than 21 was the error of so low a degree that the use of glasses was not deemed advisable, for occasionally some other cause prevented the prescription. In H. 50 per cent. of the latent H. was more often neutralized. In Ah. 17 of the 51 eyes were fully corrected by cylinders, while in 25, cylinders which neutralized only the manifest As. were required. For the 173 eyes with H.+ Ah. 20 spherical, 81 cylindrical, and 57 sphero-cylindrical lenses were prescribed. In 88 the Hl. was not corrected, in 10, 25 per cent., in 32, 50 per cent., in 23, 75 per cent., in 20

100 per cent. The latent As. in H.+Ah. was fully corrected in 38, while in 118 the correction was not considered necessary of more than the manifest or none at all. A portion of the latent ametropia in Amh. and Ahm. was usually neutralized. The same predominance in women of cases requiring atropine was noted, 169 women, 83 men. The age at which asthenopic and other symptoms appeared, ranged between the years of 10 and 40, especially from 20 to 40. The same relative predominance of head and nervous symptoms in women is here observed. Glasses were usually fitted from the 7th to the 14th day after the instillation of the atropine, when the patient had fully recovered from its effects.

COMPOUND MYOPIC ASTIGMATISM.

One hundred and seventy-six eyes with compound myopic astigmatism were subjected to the atropine test; when the examination revealed M. in 13, H. in 3, Am. in 22, Ah. in 3, M. + Am. in 128, H. + Ah. in 3, and Amh. in 4. Therefore in 16 eyes, 13 myopic and 3 hyperopic, the apparent astigmatism, which was of a moderately high degree in 5 eyes, entirely disappeared under the mydriatic. In 25 eyes the myopia was due to a spasm of the accommodation masking the real error in refraction, which was Am. in 22 and Ah. in 3; in 14 of these, however, the apparent M. was .50 D. or less. Considering now the large number of eyes, 128, in which the diagnosis remained M. + Am. we are somewhat surprised at the small amount of variation under atropine when we come to study these columns carefully. Of these 128 eyes, the M. remained unchanged in 48, while in 56 it varied only .50 D. or less, and in twenty more 1. D. or less. The As. also underwent little change; in 59 it was the same as before the use of atropine, and in 62 others it was .50 D. or less. Less variation was therefore noted between the manifest and latent error of refraction in M. + Am. than in any other refractive anomaly. The M., it will be observed, usually diminished under atropine, but the Am. as often increased as dimin-

ished. In 3 eyes with H. + Ah. the spasm was so great as to produce an apparent M. + Am.; the same also being true in 4 eyes with Amh. Of the glasses prescribed there were 31 spherical, 56 cylindrical, and 72 sphero-cylindrical, while in 17 no glass was given. As previously explained, the table gives the proportion of the full amount of ametropia neutralized and not the percentage of latent trouble. Without taking time to consider each division separately it may be stated that the As. was more commonly fully corrected by lenses than otherwise, while the M. or H. was only partially neutralized. The predominance in women of symptoms which indicated the use of atropine was 128 to 48. The age at which the symptoms became so pronounced as to require glasses was about the same in the three decades from 10 to 40 years. The symptoms of which the patients complained were about the same as in the other anomalies of refraction, except that the eye symptoms seemed to predominate somewhat over the other anomalies. The time after the use of atropine when glasses were prescribed was as usual between the seventh and tenth days.

COMPOUND HYPEROPIC ASTIGMATISM.

The number of eyes in which compound hyperopic astigmatism was found on the first examination was 79. After paralyzing the accommodation, H. was discovered in 14, Ah. in 4, while 61 remained as H. + Ah. Thus in 14 eyes there must bave been an irregular spasm of the accommodation which added an As. to the existing H. In 4 eyes with Ah., the apparent H. disappeared under atropine. In the large majority of cases (H. + Ah. = 61) the form of refractive error did not change. In these 61 the degree of H. did not vary in 14, and in 18 the variation was only .50 D., or less, while in 26 it was over 1. D., in 10 of which it was over 2 D., thus showing a very high degree of Hl. in many instances. The Ah. was unchanged in 37 eyes, while in 18 it was .50 D., or less, so indicating very little latent As. as a rule. Glasses were prescribed in 74 cases, sphericals in 23, cylinders in 12, and sphero-cylinders in 39, while in 5

no glass was given. The As. was generally wholly neutralized. This fact is not apparent at first glance at the table, as here only the latent ametropia neutralized is given—not the full amount—and as in the majority of instances no latent was present, none could be corrected. Observe, however, the large amount of *latent* ametropia which was neutralized; in 45 eyes from 25 to 100 per cent. of the H., and in 17 from 50 to 100 per cent. of the As. The sex of the patients were male 24, female 55; while the ages ranged about evenly over the whole scale from 10 to 40; several cases being noted over 40 years of age. From the 7th to the 14th days the prescription for glasses was made in the majority of cases.

MIXED ASTIGMATISM WITH PREDOMINANT MYOPIA.

The 16 eyes which first appeared to have Amh. were found to present Ah. in 1, H. + Ah. in 2, Ahm. in 6, and Amh. in 7. It will be observed that the latent ametropia was commonly of a low degree, in only 4 eyes being over 1. D. Bi-cylindrical lenses were recommended in 12 cases, cylindrical in 3, and sphero-cylindrical in 1. From 50 to 100 per cent. of the latent ametropia was generally neutralized. Fourteen of the 16 eyes were in women, and one-half of all the cases occurred in individuals between the ages of 30 and 40 years. Head and nervous symptoms together with eye symptoms were generally present. The patients probably recovered from the atropine less quickly than in the other anomalies, as in 8 instances glasses were not given until after the 14th day, owing, no doubt, to the advanced ages of the patients, as adults do not, as a rule, recover as speedily as children from a mydriatic.

MIXED ASTIGMATISM WITH PREDOMINANT HYPEROPIA.

Of mixed astigmatism with predominant hyperopia, included among which are those cases in which the Ah. and Am. were of equal degree, were 24 eyes, which under atropine gave H. in 1, Am. in 2, Ah. in 5, H. + Ah. in 7, and Ahm. in 9. A study of Table IX. shows quite forcibly that latent As. may be present even to a moderately high degree,

or that the real degree of As. may be greatly different from the apparent. This has been noted all through this analysis, and proves quite conclusively to my mind that curvature of the lens, probably owing to a partial or irregular spasm of the ciliary muscle, may frequently be added to the curvature of the cornea, and that the meridians of the two may be the same or different. Glasses were advised in all cases, spherical in 1, cylindrical in 11, sphero-cylindrical in 2, and bi-cylindrical in 10. These, as a rule, neutralized all or a large per cent. of the true error in refraction. As to sex, there were proportionally more men than in any other refractive error, 10 to 14. The ages were about evenly distributed between 10 and 50 years. Head and nervous symptoms were commonly experienced together with the asthenopic symptoms. Recovery from the atropine, so that glasses could be prescribed, generally took place between the seventh and fourteenth days.

GENERAL REMARKS AND CONCLUSIONS.

Regarding the method of using atropine I would state that its use has never been confined to the day on which the examination was made, as it has always been my aim to have the eye fully under its influence. My plan has been to have the atropine, four grains to the ounce, thoroughly instilled in the outer corner of the eye the night before and the morning of the examination, which has then been made from one to two hours after the last instillation. Care has always been taken not to allow the atropine to enter the lachrymal ducts and by passing into the throat to produce symptoms of the drug. When there has been any special reason for suspecting marked spasm of the accommodation the atropine has been used several times within twenty-four hours, and if the test with glasses then seemed to vary, its action has been continued frequently for several days.

An interesting fact, which has been brought out from a study of these cases, has been the frequency of the variation in the axis of the cylindrical lens when the accommodation has been paralyzed. In 700 astigmatic eyes the variation

in the axis of the correcting cylinder was from 5° to 15° in 128, from 15° to 30° in 50, from 30° to 45° in 19, and from 45° to 180° in 32. It is true that in some instances this variation might be accounted for by carelessness in the first examination, but it is impossible to explain all upon this supposition. Besides which, an examination after recovery from the mydriatic has demonstrated beyond doubt that there may be a deviation in the axis of abnormal curvature. The only explanation of this query which seems at all probable, is to assume the presence of irregular spasm of the accommodation. Regular astigmatism we understand to be due to unequal curvature of the cornea in opposite meridians. Now if there be present at the same time an irregular spasm of the ciliary muscle, it would produce an unequal curvature in the lens, and this curvature might neutralize the corneal curvature, might increase it, might produce an apparent astigmatism, or might change the axis of the correcting cylinder, according as to whether the curvature of the lens more or less corresponded with that of the cornea.

In prescribing glasses in these cases the endeavor should be made to correct the corneal curvature as closely as possible, though this cannot always be done with exactness in the first prescription. It then becomes necessary to correct the true astigmatism as nearly as we can and still give relief to the patient. Furthermore, I believe, it is by relieving this spasm of the accommodation, that internal medication often ameliorates to a certain extent asthenopic symptoms.

The advantages to be derived from determining the full error of refraction before giving glasses must be apparent to any reader of this article. It will be observed that a large proportion of the prescriptions could not have been made without this knowledge. Who would dare give a cylindrical lens in a case which only revealed M. or H., or a spherical lens in simple astigmatism, to say nothing of the increased strength of glass required in H. or H.+Ah.? Yes, it may be positively stated, that it is absolutely necessary in some instances to know the full error of refraction before prescribing glasses, if we would relieve our patients. That

atropine is essential to accomplish this object I would not assert, for I know how often it can be done with approximate exactitude, even if not with absolute certainty, by means of the direct method of examination, by retinoscopy and by the ophthalmometer. In fact, since the introduction of the last two methods of examination atropine is employed less and less frequently in my office, though in many cases it still seems especially desirable to put the accommodation at perfect rest by a mydriatic. Atropine has, as a rule, been employed as its action has seemed to be more thorough and complete upon the ciliary muscle than most other mydriatics, though others may answer the same purpose.

Among the disadvantages of atropine we have as the most important, the inability to use the eyes at the near point for a week or sometimes longer. This is a serious disadvantage to some patients, especially business men, in which case other methods of examination must be employed. But when the time can be taken, this non-use of the eyes must be considered an advantage in many instances, as it places the ciliary muscle at perfect rest for a week or more, so aiding very materially in relieving any attendant spasm. Again, atropine should be employed with great care in elderly people, particularly if there is any glaucomatous tendency; also in any person who has shown a special susceptibility to belladonna. My records do not definitely give the condition of all patients while under atropine. They only state that for the first day or two after its instillation or while under its full influence, that in 34 the head symptoms were relieved, in 2 the eye symptoms, and in 24 the general symptoms of which the patient complained, while in 26 the head symptoms were temporarily aggravated, and in 13 more the other symptoms. This amelioration and aggravation must have been quite marked, for as a rule no record was made as to the condition of the patient while under the full influence of the drug, which would have been done had the symptoms been decided. No serious difficulty has ever followed the use of atropine in any case in

my hands. The most serious has been the slow recovery from its effects, occasionally with some nervous symptoms which have been very rare and only temporary.

As a result, therefore, of an experience extending over nearly twenty years in which atropine has been freely employed, I believe that it can be used with perfect safety, providing care is taken in its instillation and ordinary judgment exercised in the selection of proper cases; also that it is advisable, by atropine or some other method of examination, to determine the full error of refraction in very many cases, and that in some the use of a mydriatic is absolutely essential. The question may be asked, when should we resort to atropine? In ordinary cases of refractive anomalies of all varieties, when glasses can be given and worn at once with perfect comfort, no necessity arises for further examination. But if the glass the patient apparently requires cannot be at once worn with perfect ease, or if the test seems to vary from one moment to another while making the examination, or if there is emmetropia or a low degree of myopia or of astigmatism, myopic or hyperopic, with asthenopic symptoms, head or nervous disturbances, especially complicated with esophoria, then I always advise an examination to determine the full error of refraction.

REVIEWS.

ANNUAL OF THE UNIVERSAL MEDICAL SCIENCES. Edited by CHARLES E. SAJOUS, M.D., and seventy associate editors, assisted by over 200 corresponding editors, collaborators, and correspondents. Illustrated with chromo-lithographs, engravings, and maps. Five volumes. Philadelphia: F. A. Davis. 1890.

This third yearly report of the progress made in medical science during the year 1889, came from the press at the usual time last June. The favorable notice we gave of the work last year can be repeated this. The criticism we then made that it confined its report to the progress made in one school of medicine only, has been in part obviated in this present edition, so far as the eye, ear, and throat are concerned, by giving short notices of most of the articles appearing in the JOURNAL OF OPHTHALMOLOGY, OTOLOGY, AND LARYNGOLOGY. For a specialist who has not the opportunity or time to read all the articles which appear in the various languages upon the subjects in which he is interested, a work of this kind is of great advantage. To the general practitioner the value of this work can hardly be overestimated.

In Vol. IV. are to be found those sections which relate to the eye, ear, and throat. The resumé of progress in ophthalmology fills 146 pages; otology, 42; diseases of the nose and accessory cavities, 42; diseases of the pharynx, tonsils, and soft palate, 12; diseases of the larynx, trachea, and æsophagus, 36; intubation of the larynx, 10; diseases of the thyroid gland, 12. All of these sections are quite profusely illustrated by excellent engravings, while in ophthalmology the few chromo-lithographs which appear are deserving of special mention, and will prove of much interest to all oculists.

Both editor and publisher are to be congratulated upon the success of their labors in presenting to the profession so excellent a report upon medical progress during the year 1889.

SAUNDERS'S QUESTION COMPENDS, NO. 14. ESSENTIALS OF DISEASES OF THE EYE, NOSE, AND THROAT. By EDWARD JACKSON, A.M., M.D., and E. BALDWIN GLEASON, S.B., M.D. Philadelphia: W. B. Saunders. 1890.

This small book is divided into two parts. Part I., 145 pages, is devoted to Refraction and Diseases of the Eye, and is by Dr. Jackson. Part II., 112 pages, upon Diseases of the Nose and Throat, is written by Dr. Gleason. Both parts are well written and should prove of service to students in general medicine, but they necessarily are too superficial for ophthalmic students.

MISCELLANEOUS NOTICES.

ANNOUNCEMENT.—Owing to the summer vacation, and the late date of the meeting of the Homœopathic Medical Society of the State of New York, at which several of our papers were read, this number of the JOURNAL has been delayed. In addition, however, to the papers herewith presented, the following have been received and will appear in the January issue: "A Report of Fifty Cases of Cataract Extraction," by Chas. M. Thomas, M.D.; "Atrophy of the Optic Nerves Following Spinal Injury," by W. P. Fowler, M.D.; "A Foreign Body in the Iris," by Thomas M. Stewart, M.D.; "Blindness from a Penetrating Wound of the Temple and Orbit," by Harold Wilson, M.D.; "Obstructions of the Lachrymal Apparatus," by H. C. French, M.D.; "Positive Prognosis," by A. C. Peterson, M.D.; "A Modified Nasal Douche" (with plate), by Francis B. Kellogg, M.D.; "Eserine as a Therapeutic Agent in Spasm of Accommodation," by N. L. MacBride, M.D.; "A Case of Persistent Pupillary Membrane" (with plate), by Geo. A. Shepard, M.D.; "Ophthalmological Notes," by H. H. Crippen, M.D.; "Rheumatic Spasm of the Ciliary Muscle," by Charles Deady, M.D.; "Retinitis Diabetica" (with chromo-lithograph), by Geo. S. Norton, M.D.

REMOVAL.—Dr. Charles Deady has removed to 59 West Forty-Ninth Street.

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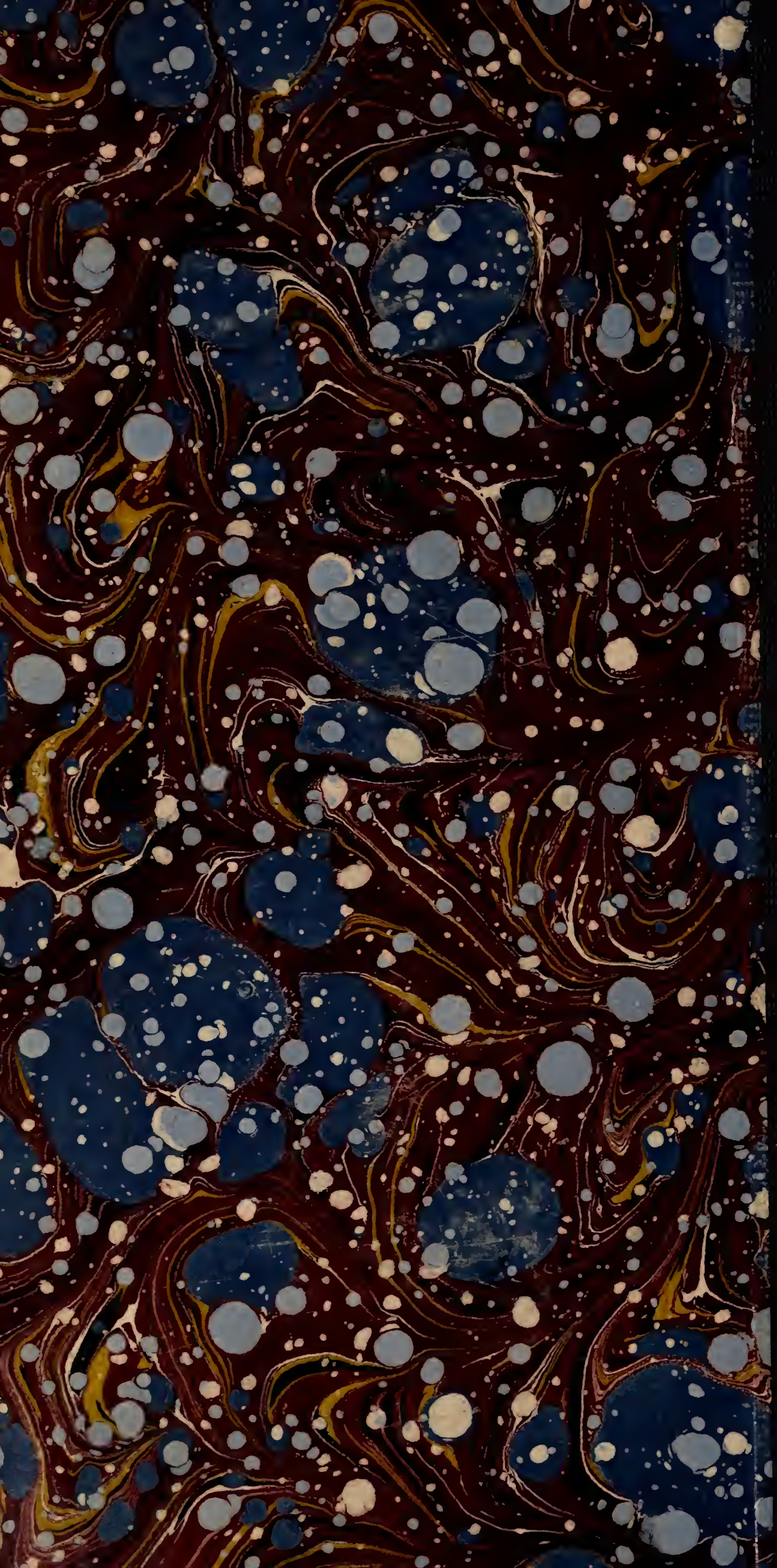
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